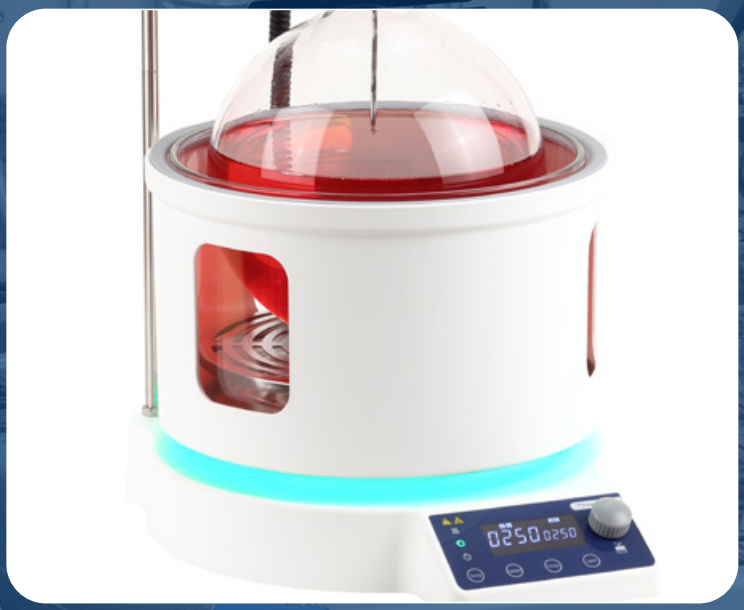
PHOENIX Instrument

Lab solutions



Stirrer
Temperature Instruments
Ozone Generators
Mixer
Shaker
Centrifuges
Liquid Handling
Lab Jacks
Electrodes
Rotatory Evaporator
Electrochemistry
Balances

Catalog 2027

Idea

PHOENIX INSTRUMENT GmbH starts with a new concept to comply customer demands for high-quality but also well-priced laboratory instruments.

Implementation

Absolute customer orientation and satisfaction is the focus of all activities of PHOENIX INSTRUMENT.

Your Benefit

As our customer you will take advantage of our long market experience, the attractive prices and the short delivery times.

We guarantee comprehensive and competent consultations in all aspects and will always listen to your wishes, ideas and suggestions.

It goes without saying that PHOENIX INSTRUMENT offers a technical service, if required.

Phoenix Instrument GmbH was founded in 2010 by Christian Lieske and Marco Riemer.

Together we have more than 50 years of experience in the distribution of laboratory instruments.

It is our goal to provide instruments with a high quality standard for the daily demand in all kind of laboratories at a good price and a decent service.

We supply our products through a close network of qualified laboratory distributors to allow an easy access to our products. It goes without saying that we are always at your disposal for a personal advice.

Logistics Center in Garbsen

Our logistics center is conveniently located between the highways A2 und A7 in the industrial area of Garbsen near Hannover. Starting point of worldwide shipping. Reliable, fast and flexibel.

Stirrer

Page 6

A variety of magnetic Stirrer with and without heating function.

Shaker

Page 18

Shaker, Rotator, Mixer and Roller for gentle, but intensive sample mixing.

Centrifuges

Page 40

Centrifuge are used to separate liquid and solid particles or components in a liquid mixture.

Liquid Handling

Page 50

Pipettes with variable and fix volume, Pipette filler, Dispenser, Aspiration systems.

Temperature Instruments

Page 60

Incubators, Ovens, Waterbaths, Incubation Shaker, Circulation Baths, Climatic Chambers.

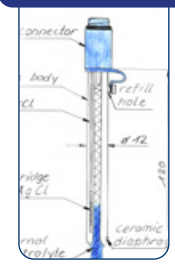
Elektrochemistry

Page 82

Portable and benchtop pH-Meter, Conductivity-Meter, Multiparameter, Tester.

Electrodes

Page 102



pH Standard Electrodes, DHS pH Electrodes, ORP Measurement.

Temperature Measurement

Page 112

Digital portable Thermometer with simple and intuitive interface. For PT100, NTC30K or Thermocouples Type K and T.

Ultrasonic Baths

Page 114

Digital, heated Ultrasonic Baths with Sweep-Technologie.

Rotatory Evaporator

Page 118

Suitable for applications in pilot production,biotechnology, pharmaceutical, chemical, cosmetics, and the food industry.

Balances

Page 120

Semi-micro-, Analytical,- Toploading Balances, Moisture Analyzer.

Lab Jacks

Page 136

Accurately adjustment for the position of laboratory objects.

Ozone Generators

Page 137

Entire rooms can be disinfected quickly and efficiently.

Stirrer

Magnetic Stirrer

The magnetic stirrers from Phoenix Instrument offer the right devices for all areas of daily laboratory routine. You have the choice between digital or analogue devices.

Both variants are available with or without heating function. Most of the stirrers with heating function have an integrated control function.

The comprehensive extensive range of accessories extends from the stand rod and temperature sensor to protective covers and reactor attachments.

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Magnetic Stirrer

RSM-ECO

- analog Magnetic stirrer
- stepless speed regulation from 300 to 2,000 rpm
- chemical resistant surface
- compact, sealed housing
- silent, vibration free use
- maintenance-free Motor
- includes holder for pH-electrodes

RSM-10A

- analog Magnetic stirrer
- compact construction
- sealed housing (IP42)

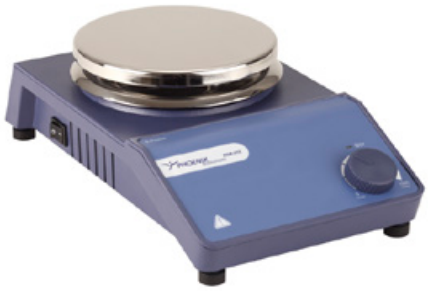
RSM-10B

- digital Magnetic stirrer
- compact construction
- sealed housing (IP42)

2 years warranty

Technical Data	RSM-10A	RSM-10B	RSM-ECO
Stirring volume (H_2O)	3 l		1.5 l
Speed	50 - 1,500 rpm	200 - 1,500 rpm	300 - 2,000 rpm
Plate dimension ø	135 mm		120 mm
Plate material	Plastic		
Motor	DC, brushless		
Display	analog	LED	analog
Max. stirring bar length	50 mm		40 mm
Voltage • Frequency	100 - 240 VAC • 50/60 Hz		
Power	10 W	15 W	7,2 W
Protection class acc. EN60529	IP 42		IP 21
Weight	1.5 kg		0.6 kg

Magnetic Stirrer / Magnetic Stirrer with heating function



RSM-01S

- Typical magnetic stirrer in a modern Design
- sturdy metal housing IP 42
- high stirring power and volume (20 Liter)

RSM-01HS • RSM-01HP

2 years warranty

- classic, analogue magnetic stirrer
- stirring plate in stainless steel or covered with porcelain
- sturdy design (metal housing, IP 42)
- high stirring volume (20 Liter)

RSM-02HSP • RSM-02HPP

- magnetic stirrer of the latest generation
- connector for PT-1000, integrated control function
- digital adjustment with backlit Display
- RS 232 to control the stirrer and to transfer data
- indicator for hot surface, even when stirrer is shut-off
- comprehensive range of accessories
- high stirring volume (20 Liter)

Technical Data	RSM-01S	RSM-01HS	RSM-01HP	RSM-02HSP	RSM-02HPP
Stirring volume (H_2O)	20 L				
Speed	50 - 1,500 rpm			100 - 1,500 rpm	
Temperature range	-	RT+5 to 340 °C			
Heating power	-	500 W			
Temperature accuracy	-	-	-	1 °C	
Plate dimension ø	135 mm				
Plate material	Stainless steel		Stainless steel with porcelain surface	Stainless steel	Stainless steel with porcelain surface
Motor	DC, brushless				
Display	analog			LCD	
Interface	-	-	-	RS-232	
Max. stirring bar length	80 mm				
Connector for temperatur sensor	-	-	-	yes	
Safety temperatur	-	420 °C			
Voltage • Frequency	200 - 240 VAC • 50/60 Hz				
Power	30 W	550 W			
Protection class acc. EN60529	IP 42				
Dimension	160 x 280 x 85 mm				
Weight	2.9 kg	3 kg	3.1 kg		3.2 kg

Magnetic Stirrer with heating function

RSM-04H

- analog Magnetic stirrer with integrated control function
- Temperature sensor PT-1000 included
- sturdy full metal housing
- backlit digital display or LED
- glass ceramic hotplate (180 x 180 mm)
- hot plate warning, even when the stirrer is shut-off

2 years warranty

RSM-05H

- digital Magnetic stirrer with integrated control function
- temperature sensor PT-1000 included
- sturdy full metal housing with large glass ceramic hot plate (180 x 180 mm)
- hot plate warning, even when the stirrer is shut-off
- high stirring volume (20 Liter)

RSM-06H

- up to 30 liter stirring volume, Powerfull brushless DC motor
- large glass ceramic plate for excellent chemical resistant performance and efficient heat transfer
- LCD display for precise monitoring of speed and temperature
- connector for external temperature sensor PT-1000
- digital speed control of 100 - 1,500 rpm, max. heating plate temperature 500 °C
- hotplate warning even when the stirrer is off
- data connector: The SD card records the instrument's running data in real time
- timing function: the running time of the instrument can be set
- high stirring volume (30 Liter)

Technical Data	RSM-04H	RSM-05H	RSM-06H
Stirring volume (H_2O)	10 L	20 L	30 L
Speed	100 - 1,500 rpm		
Temperate range	RT+5 to 550 °C		RT+5 to 500 °C
Heating power	1,000 W		1,500 W
Temp. Accuracy	5 °C	1 °C	
Plate dimension	184 x 184 mm		254 x 254 mm
Plate material	Glass ceramic		
Motor	DC, brushless		
Dispaly	LED	LCD	
Interface	-	RS-232	SD-Card
Max. stirring bar length	80 mm		
Connector for temperature sensor	yes		
Safety temperature	580 °C		540 °C
Voltage • Frequency	200 - 240 VAC • 50/60 Hz		
Power	1,050 W		1,700 W
Protection class acc. EN60529	IP 21		
Dimension	215 x 340 x 110 mm		330 x 425 x 140 mm
Weight	5.9 kg		7.2 kg

Magnetic Stirrer with heating function

RSM-10HS / RSM-10HP

- LED-Display for accurate regulation of speed and temperature
- digital controled speed and temperature
- indicator for hot surface, even when stirrer is shut-off
- connector for PT-1000
- hotplate made of stainless steel or with porcelain surface
- compact construction, sealed housing (IP42)

2 years warranty

RSM-14HP

- LCD-Display for accurate regulation and digital control of speed and temperature
- indicator for hot surface, even when the stirrer is shut-off
- connector for PT-1000
- hotplate made of Aluminum
- integrated temperature control function
- compact construction, sealed housing (IP42)

Technical Data	RSM-10HS	RSM10HP	RSM-14HP
Stirring volume (H_2O)	3 L		5 L
Speed	200 - 1,500 rpm		
Temperate range	RT+5 to 280 °C		RT+5 to 340 °C
Heating power	500 W		
Temp. accuracy	2 °C		1 °C
Plate dimension	135 mm ø		140 x 140 mm
Plate material	Stainless steel	Stainless steel with porcelain surface	Aluminium with porcelain surface
Motor	DC, brushless		
Dispaly	LED		
Interface	-	-	-
Max. stirring bar length	50 mm		
Connector for temperature sensor	yes		
Safety temperature	320 °C		420 °C
Voltage • Frequency	100 - 240 VAC • 50/60 Hz		
Power	515 W		510 W
Protection class acc. EN60529	IP 21		
Dimension	155 x 215 x 100 mm		180 x 320 x 108 mm
Weight	2.1 kg	2.2 kg	3.2 kg

Magnetic stirrer with heating mantle RSM-12-F 250 and RSM-12-B 250

The new, revolutionary stirrer RSM-12-F250 and RSM-12-B250 offer the perfect combination of a classic magnetic stirrer and a heating mantle for round-bottom flasks or beakers. The brand-new device is a very popular product for laboratories in scientific research, industry and mining, food processing, biochemistry, agriculture, petrochemical, pharmaceutical, and educational sector. It is used for heating and incubation of liquids at a certain temperature. It provides fast and uniform heating with highly precise temperature control and strong stirring power.

RSM-12-F 250 and RSM-12-B 250

- The smart magnetic stirrer can be flexibly set up with inter-changeable heating sleeves for 100 mL, 250 mL, 500 mL, 1,000 mL round-bottom flask, or flat bottom beakers.
- Even more flexible configurations: as a heating magnetic stirrer, or as a heating sleeve plus a magnetic stirrer.
- Maintenance-free, brushless DC motor.
- Heating sleeve made of high-quality Aluminum silicate fiber cotton with accurate temperature control, uniform heating and corrosion resistance.
- Strengthened magnetic fields with enhanced stirring power
- Sturdy metal housing.
- The “HOT” warning will flash if the work plate temperature is above 50 °C even when the hotplate is turned off.
- Two independent safety circuits for continuous monitoring of the equipment.

2 years warranty

Technical data	RSM-12-F 250 and RSM-12-B 250
Temperature range	RT - 280 °C
Temperature accuracy	± 1 °C
Overhead protection	420 °C
External temp. sensor	PT-1000 (± 0,2 °C)
Speed range / Speed accuracy	200 – 1,500 / 20 rpm
Display	LCD
Voltage • Frequency	200-240 V • 50/60Hz
Heating power	240 Watt
Weight	3.7 kg
Ambient temperature	5-40 °C
Relative humidity	80 %
Safety class acc. DIN 60529	IP 21
Dimension (W x D x H)	295 x 160 x 160 mm

RSM-12-F 250

RSM-12-F 250 Stirrer with Heating mantle for 250 ml round-bottom flasks, PT-1000 and Stand
RSM-12-B 250 Stirrer with Heating mantle for 250 ml flat-bottom beaker, PT-1000 and Stand

Accessories

RSM-F 100 Heating mantle for 100 mL round-bottom flask, in connection with stirrer RSM-12…, 210 W
RSM-F 250 Heating mantle for 250 mL round-bottom flask, in connection with stirrer RSM-12…, 240 W
RSM-F 500 Heating mantle for 500 mL round-bottom flask, in connection with stirrer RSM-12…, 380 W
RSM-F 1000 Heating mantle for 1,000 mL round-bottom flask, in connection with stirrer RSM-12…, 440 W
RSM-B 100 Heating mantle for 100 mL flat-bottom beaker, in connection with stirrer RSM-12…, 210 W
RSM-B 250 Heating mantle for 250 mL flat-bottom beaker, in connection with stirrer RSM-12…, 240 W
RSM-B 500 Heating mantle for 500 mL flat-bottom beaker, in connection with stirrer RSM-12…, 380 W
RSM-B 1000 Heating mantle for 1,000 mL flat-bottom beaker, in connection with stirrer RSM-12…, 440 W

RSM-E 400 FI Circuit breaker, 10mA - Protective contact 230 V,16A

New Magnetic Stirrer RSM-25H and RSM-30H

We are excited to launch the newly developed magnetic stirrer RSM-25H and RSM-30H. They combine a high-quality and modern industrial design with new, outstanding features, which makes it an outstanding device for everyday laboratory work.

RSM-25H and RSM-30H

- Large corrosion-resistant glass-ceramic work plate on RSM-30H and ceramic coated on RSM-25H
- Sturdy full-metal housing
- Attractive and waterproofed design protects inside components
- High-temperature resistant strong magnetic magnet, suitable for viscous liquid stirring
- 3 heating modes for all different customer demands
- Safety locks to prevent accidental changes in operating conditions
- Indicator for hot surface, even when the stirrer is shut-off, Safety temperature can be set
- Two independent safety circuits, maintenance-free DC brushless motor
- maintenance-free, smooth running.
- Newly designed LCD display sets real-time values of speed, time and temperature in an intuitive and clear manner
- Timer function
- External temperature sensor PT-1000 can be connected
- Remote control function with PC connection (RS-232 interface)
- Wide range of accessories
- incl. Sensor and stand holder

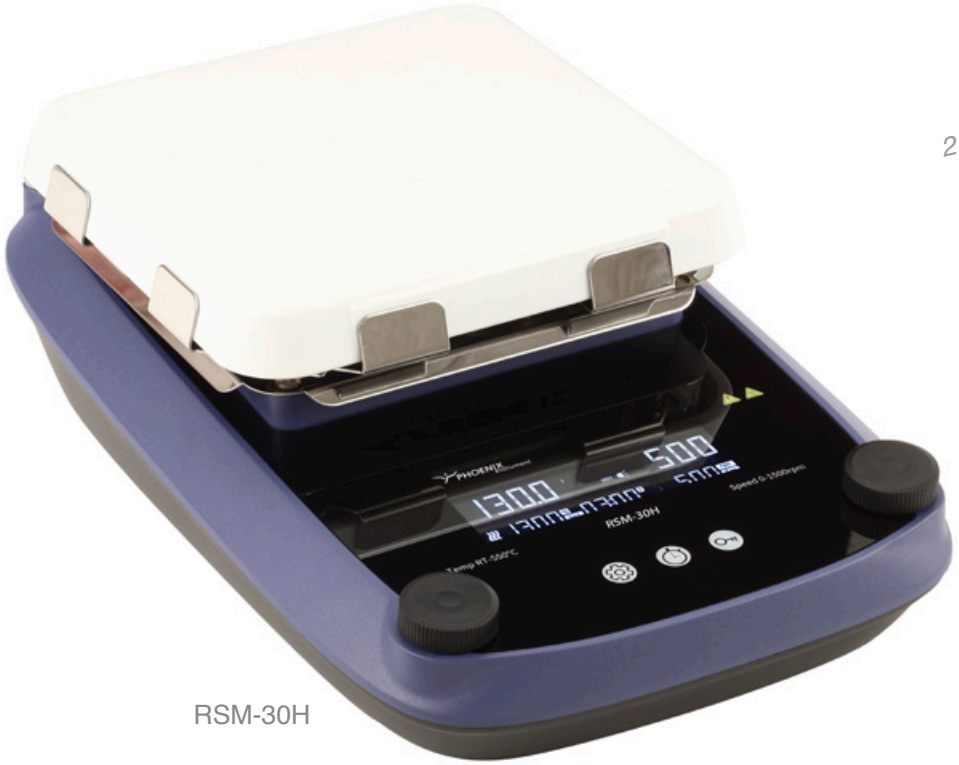
Intuitive LCD-Display

RSM-25H

2 years warranty

New Magnetic Stirrer RSM-25H and RSM-30H

2 years warranty



RSM-30H

Stand holder with Sensor PT-1000

Technical data	RSM-25H	RSM-30H
Stirring volume (H_2O)	20 L	20 L
Work plate dimension	Ø 135 mm	184 x 184 mm
Work plate material	Aluminum with ceramic coating	Glass ceramic
Speed Range / Increment	50 - 1,500 rpm / 1 rpm	
Display	LCD	
Stirring Positions	1	
Max. magnetic bar length	80 mm	
Temperature Range / Increment	RT - 340 °C / 1 °C	RT - 550 °C / 1 °C
Temperature display accuracy	± 0.1 °C	
Time range	1 min - 99 h 59 min	
Motortype	Brushless DC-motor	
Power Supply	200-240V • 50-60Hz	
Power Consumption	650 W	1,200 W
Dimension (L x W x H)	270 x 175 x 105 mm	360 x 230 x 123 mm
Weight	2.2 kg	4.3 kg
Ambient conditions	5 - 40 °C, 80 % RH	
IP Protection class	IP 42	IP 21

Analog Multiposition Stirrer RSM-03-10K

RSM-03-10K

- analog 10-place Magnetic stirrer
- stepless speed control from 50 to 1100 rpm
- stainless steel plate with silicone films, anti-slip and anti-corrosion

RSM-03-10KH

- additional with heating

15-Place Stirrer RSM-03-15K

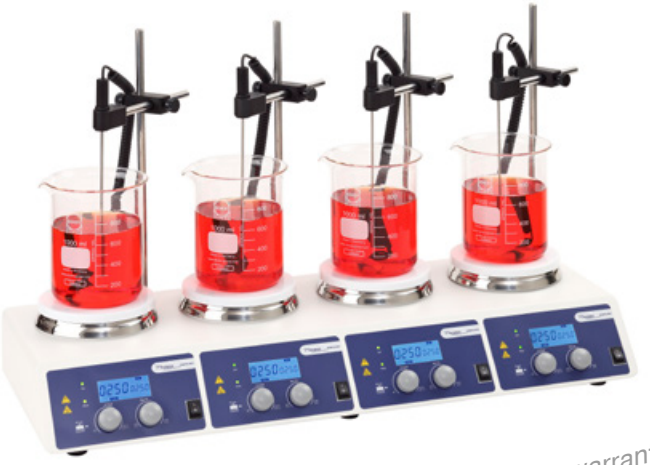
Newly developed 15-place magnetic stirrer is designed for series tests under reproducible conditions with stable performance, good reproducibility, high accuracy and easy operation.

RSM-03-15K

- 15 stirring positions are divided into 3 independent groups and each group can be controlled respectively at different speeds and time settings
- LCD displays show the current speeds and time
- Maintenance-free, brushless DC motor
- Aluminum laser engraving work plate surface, anti-abrasive, skid and corrosion proof
- Buzzer function - when the time countdown ends, the buzzer will remind the user by sound

2 years warranty

4 Place Magnetic Stirrer with heating function RSM-03-4KH
6-Place Stierer with Heating RSM-03-6KH



RSM-03-4KH

- digital 4-position magnetic stirrer with integrated controller function
- connection for external PT-1000
- each stirring point can be controlled separately
- temperature sensors and columns are included in delivery
- hotplate made of stainless steel with porcelain surface
- hotplate warning even when the stirrer is turned off
- maintenance-free, brushless DC Motor

2 years warranty

RSM-03-6KH

- Each stirring point can be controlled separately
- LCD displays show the current temperatures or speeds
- PID controller ensures precise and even heating process
- Maintenance-free, brushless DC motor
- external temperature sensor (PT1000) with an accuracy of 1 °C
- Stainless steel worktop with ceramic coating provides good chemical resistant performance
- Stands and temperature probe are included in the delivery
- Compatible with various heating block or reaction vessels
- Two independent safety circuits are monitoring the instrument

Technical data	RSM-03-4KH	RSM-03-6KH	RSM-03-10K	RSM-03-10KH	RSM-03-15K
Stirring points	4	6	10		15
Stirring volume H_2O	4 x 10 L	6 x 3 L	10 x 0.4 L		15 x 0.4 L
Speed	200 - 1,500 rpm		50 - 1,100 rpm		100 - 1,500 rpm
Temperature range	RT+5 - 340 °C	RT+5 - 280 °C	-	RT+5 - 120 °C	-
Heating power	4 x 500 W	6 x 600 W	-	470 W	-
Temp. accuracy	1 °C		-	-	-
Plate dimension	4 x 135 mm	6 x 134 mm	180 x 450 mm		304 x 460 mm
Plate material	Stainless steel with porcelain surface		Stainless steel with silicone film		Aluminum
Motor	DC, bürstenlos				
Display	digital	LCD	analog		LCD
Max. stirring bar	40 mm				
Connector for temp sensor	yes		no		-
Safety temperature	420 °C		-	140 °C	-
Voltage • Frequency	200 - 240 VAC • 50/60 Hz				100-240 VAC • 50/60 Hz
Power	4 x 515 W	6 x 605 W	490 W	20 W	40 W
Protection class EN60529	IP 20	IP 21	IP 41		IP 21
Dimension (W x D x H)	700 x 270 x 130 mm	564 x 523 x 127 mm	185 x 620 x 65 mm		307 x 615 x 90 mm
Weight	11.9 kg	12.7 kg	5.9 kg	6.1 kg	9.2 kg

Water/Oil Bath with Magnetic Stirrer

The new, revolutionary digital water and oil bath RS-WB-3 / RS-WB-5 with integrated magnetic stirrer ensures homogeneous heat distribution in the bath and in the flask containing the sample to be heated.
The insulated bath made of borosilicate glass with a stainless-steel base has two viewing windows for better observation of the reactions.
An external PT-1000 ensures precise temperature control. During operation, the water bath permanently displays the current status via LED lighting.

2 years warranty

RS-WB-5

RS-WB-3 / RS-WB-5

- Water and oil bath with integrated magnetic stirrer
- Borosilicate glass stirring vessel with stainless steel base
- LCD display for speed, time, and temperature
- Simultaneous stirring of the bath medium and the liquid in the flask
- Uniform heating of the water or oil and the sample
- Stirring function continues after heating stops to prevent overheating
- HOT warning at temperatures > 50 °C, even when the device is switched off
- Timer function - after expiry, the stirring function remains active to prevent overheating
- One point calibration and integrated control function
- LED status display
- Maintenance-free DC brushless motor
- Protective cover included
- Dry-run and overheating protection

Technical data	RS-WB-3	RS-WB-5
Max. stirring Volume	3 L	5 L
Temperature range Accuracy	RT – 220 °C ± 1 °C	
Overheating protection	350 °C	
Pan material	High Borosilicate glass + stainless steel base	
Speed range Speed accuracy	100 – 1,500 rpm 10 rpm	
Bath Size Ø	220 x 110 mm	240 x 140 mm
External temp. sensor	PT-1000 (± 0,2°C)	
Voltage • Frequency	200-240 V • 50/60Hz	
Heating power	850 Watt	1.300 Watt
Weight	6 kg	6,7 kg
Ambient temperature Rel. humidity	5-40 °C 80 %	
Safety class according to DIN 60529	IP 21	
Dimension (W x D x H)	283 x 343 x 210 mm	283 x 343 x 240 mm

Accessories Magnetic Stirrer

RSM-E 100	Carrier plate to be used for hotplate stainless steel (RSM-01/02HS)
RSM-E 110	Red quarter pie, 11-holes, Ø 15.2 mm, depth 19 mm, to be used with RSM-E 100/105
RSM-E 120	Purple quarter pie, 4-holes, Ø 28 mm, depth 24 mm, to be used with RSM-E 100/105
RSM-E 130	Blue quarter pie, 4-holes, Ø 28 mm, depth 30 mm, to be used with RSM-E 100/105
RSM-E 140	Black quarter pie, 4-holes, Ø 28 mm, depth 42.8 mm, to be used with RSM-E 100/105
RSM-E 150	Green quarter pie, 8-holes, Ø 17.75 mm, depth 25.5 mm, to be used with RSM-E 100/105
RSM-E 160	Golden quarter pie, 4-holes, Ø 21.6 mm, depth 31.7 mm, to be used with RSM-E 100/105
RSM-E 165	Aluminum alloy bead bath block 500 ml, with 500 ml beads for RSM-02HSP
RSM-E 166	Aluminum alloy bead bath block 1,000 ml, with 1,000 ml beads for RSM-02HSP
RSM-E 167	Aluminum alloy beads 1 kg (500 ml)
RSM-E 170	Reaction block for round flasks 50 ml
RSM-E 172	Reaction block for round flasks 100 ml
RSM-E 174	Reaction block for round flasks 250 ml
RSM-E 176	Reaction block for round flasks 500 ml
RSM-E 178	Reaction block for round flasks 1,000 ml
RSM-E 200	Stirrer bar, 10 x 6 mm, 1 pc
RSM-E 205	Stirrer bar, 15 x 8 mm, 1 pc
RSM-E 210	Stirrer bar, 20 x 8 mm, 1 pc
RSM-E 215	Stirrer bar, 25 x 8 mm, 1 pc
RSM-E 220	Stirrer bar, 30 x 8 mm, 1 pc
RSM-E 225	Stirrer bar, 40 x 8 mm, 1 pc
RSM-E 230	Stirrer bar, 50 x 8 mm, 1 pc
RSM-E 235	Stirrer bar, 65 x 8 mm, 1 pc
RSM-E 240	Stirrer bar, 80 x 13 mm, 1 pc
RSM-E 310	Stirrer bar remover
RSM-E 320	Temperature sensor PT-1000
RSM-E 320G	Temperature sensor PT-1000, Glass coated
RSM-E 330	Stand holder for PT-1000 for RSM 01/02/04/05
RSM-E 335	Stand holder for PT-1000 for RSM-10
RSM-E 340	Protection cover for RSM01/02 without hotplate
RSM-E 350	Protection cover for RSM01/02 with hotplate
RSM-E 355	Protection cover for RSM10 with hotplate
RSM-E 360	Protection cover for RSM-25H
RSM-E 365	Protection cover for RSM-30H

Quarter pies on carrier plate

Stand holder kit

Reaction block

Aluminum alloy bead bath

Shaker

Shaker, Rotator, Disk Mixer, Roller, Stirrer

Whether gentle agitation, horizontal or orbital shaking or the intensive mixing of media, our shaker, roller, rotator and mixers offer the right device for all application and areas of daily laboratory routine.

Thanks to the extensive range of accessories, the instruments can be configured individually for every task.

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Digital Orbital Shaker RS-OS and RS-OS 6M

Newly developed compact shaker, designed for time-dependent and low speed-sensitive shaking applications such as ELISA washes, enzyme immunoassays, protein synthesis, hybridization staining/destaining gels, immune precipitation and Western blots, cell culture, pharmaceutical profiling, etc.

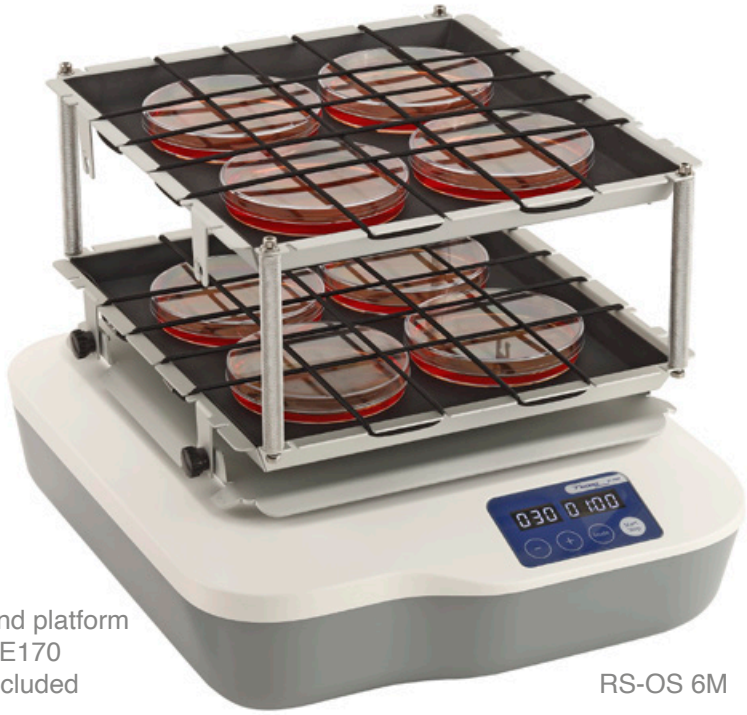
2 years warranty

RS-OS 6

RS-OS 6 and RS-OS 6M

- Double LED`s for separate display of speed and time
- Compact shaker with a max. capacity of 2 kg
- Continuous or timer operation mode.
- Including fix work plate (RS-OS6) or flexible work plate (RS-OS6M)
- Interchangeable attachments for various applications (RS-OS 6M only)
- Maintenance-free, brushless DC motor
- Easy operation

Technical Data	RS-OS 6	RS-OS 6M
Voltage	100 - 240 V	
Power	20 W	
Shaking Movement	Orbital	
Max. shaking weight	2 kg	
Speed	40 - 200 rpm	
Platform	fix	interchangeable
Timer	1 min - 19 h 59 min	
Adjustment Speed/Time	Digital	
Dimension	295 × 350 × 125 mm	
Platform size	268 x 268 mm	
Protection class	IP 21	
Weight	3.1 kg	



Second platform
RSS-E170
not included

RS-OS 6M

Digital Orbital and Linear Shaker RS-OS • RS-LS

RS-OS 10/20 • RS-LS 10/20

- compact shaker with a maximum capacity of 2.5/ 7.5 kg
- backlit display for easy adjustment of time and speed
- fix stand with anti-slipping feet
- adjustable safety speed
- RS 232-interface to control the shaker and to transfer data
- comprehensive range of accessories

2 years warranty

RS-OS-10/20

Technical Data	RS-OS 10	RS-OS 20	RS-LS 10	RS-LS 20
Shaking movement	orbital		linear	
Shaking diameter	4 mm	10 mm	4 mm	10 mm
Max. shaking weight	2.5 kg	7.5 kg	2.5 kg	7.5 kg
Speed	100 - 800 rpm	100 - 500 rpm	100 - 800 rpm	100 - 500 rpm
Timer-function	yes, 1 - 1.199 min			
Operation	Timer / Continous			
Dispaly Speed / Time	LCD / LCD			
Adjustment Speed / Time	digital			
RS-232	yes			
Dimension	340 x 300 x 100 mm	420 x 370 x 100 mm	340 x 300 x 100 mm	420 x 370 x 100 mm
Dimension Plattform	240 x 240 mm	320 x 320 mm	240 x 240 mm	320 x 320 mm
Protection class	IP 21			
Voltage • Frequency	100 - 240 VAC • 50/60 Hz			
Weight	7.9 kg	13.4 kg	7.9 kg	13.4 kg

Digital Sea-Saw Shaker RS-RR 10 and 3D-Shaker RS-RD 10

RS-RR 10 • RS-RD 10

- gentle sample mixing
- sturdy construction
- backlit display
- simultaneous display of speed and time
- fix stand with anti-slipping feet
- attachment included
- comprehensive range of accessories
- RSS-E 220 included

2 years warranty

Technical Data	RS-RR 10	RS-RD 10
Shaking movement	Sea-saw	3D orbital
Shaking angel	±9 °	
Max. speed	10 - 70 rpm	
Dispaly	LCD	
Timer-function	yes, 1 - 1.199 min	
Operation	Timer / Continous	
Max. shaking weigt	10 kg	5 kg
Dimension	420 x 370 x 106 mm	420 x 370 x 200 mm
Dimension Platform	320 x 320 mm	
Ambient temperature	5 - 40 °C	
Protection class	IP 21	
Voltage • Frequency	100 - 240 VAC • 50/60 Hz	
Weight	13.9 kg	15.1 kg

Rocking Shaker RS-RS 6 and 3D-Shaker RS-DS 6

Newly developed compact shaker, designed for time-dependent and low speed-sensitive shaking applications such as ELISA washes, enzyme immunoassays, protein synthesis, hybridization staining/destaining gels, immune precipitation and Western blots, cell culture, pharmaceutical profiling, etc.

2 years warranty

RS-DS 6

RS-RS 6 and RS-DS 6

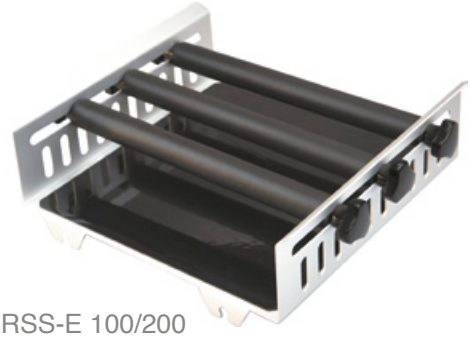
- Double LED`s for separate display of speed and time
- compact shaker with a max. capacity of 2 kg
- Continuous or timer operation mode
- Fixed work plate
- Maintenance-free, brushless DC motor
- Easy operation

Technical Data	RS-RS 6	RS-DS 6
Voltage	100 - 240 V	
Power	20 W	
Shaking movement	Sea-Saw	3D-Motion
Shaking Angle	7 °	10 °
Max. shaking weight	2 kg	
Speed	10 - 80 rpm	
Timer	1 min - 19 h 59 min	
Adjustment Speed / Time	Digital	
Dimension	295 x 350 x 125 mm	295 x 350 x 170 mm
Platform size	268 x 268 mm	
Protection class	IP 21	
Weight	3.1 kg	3.7 kg

RS-RS 6

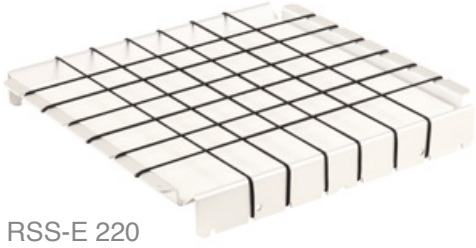
Shaker Accessories

RSS-E 100	Universal attachment with clamping rolls OS/LS 6, 10, RS-RS 5 and RS-DS 5
RSS-E 105	Base plate for OS/LS 6, 10, RS-RS 5, RS-DS 5 to be used with Erlenmeyer fixing clips
RSS-E 110	Universal attachment with vertical adjustable clamping rolls OS/LS 10
RSS-E 115	Dish attachment for OS/LS 6, 10, RS-RS 5 and RS-DS 5, incl. fixing belts
RSS-E 160	Dish attachment for OS/LS 6, 10, RS-RS 5 and RS-DS 5, 20 x 30 cm, incl. fixing belts
RSS-E 165	Dish attachment for OS/LS 6, 10, RS-RS 5 and RS-DS 5, 28 x 28 cm, incl. fixing belts
RSS-E 168	Connector to use 2 disk modules/ 4pcs
RSS-E 170	2nd platform extension for RS-OS 6M with disk module plus 4 connectors
RSS-E 180	Silicone mat for dish attachment RSS-E 115 for 10 × 5-10 mL tubes
RSS-E 181	Silicone mat for dish attachment RSS-E 115 for 4 × 50 mL tubes
RSS-E 182	Silicone mat for dish attachment RSS-E 220 for 16 × 5-15 mL tubes
RSS-E 183	Silicone mat for dish attachment RSS-E 220 for 6 × 50 mL tubes
RSS-E 190	Sticky Pad for RS-OS 6, RS-OS 6M, RS-RS 6, RS-RD 6, RS-OS 10, 23,8 x 23,8 cm, 0 - 220 rpm
RSS-E 195	Sticky Pad for RS-RR 10, RS-RD 10, RS-OS 20, RS-LS 20, 28,4 x 29,6 cm, 0 - 220 rpm
RSS-E 200	Universal attachment with clamping rolls OS/LS 20
RSS-E 205	Base plate for OS/LS 20 to be used with Erlenmeyer fixing clips
RSS-E 210	Universal attachment with vertical adjustable Clamping rolls for OS/LS 20, RS-RR 10 and RS-RD 10
RSS-E 220	Dish attachment with fixing belts for OS/LS 20, RS-RR 10 and RS-RD 10
RSS-E 120	Fixing clip for Erlenmeyer flask 25 mL volume
RSS-E 125	Fixing clip for Erlenmeyer flask 50 mL volume
RSS-E 130	Fixing clip for Erlenmeyer flask 100 mL volume
RSS-E 135	Fixing clip for Erlenmeyer flask 200/250 mL volume
RSS-E 140	Fixing clip for Erlenmeyer flask 500 mL volume
RSS-E 141	Fixing clip for Erlenmeyer flask 1,000 mL volume
RSS-E 145	Clamping rolls for RSS-E 100
RSS-E 245	Clamping rolls for RSS-E 200


RSS-E 100/200

Fixing clip for Erlenmeyer flasks

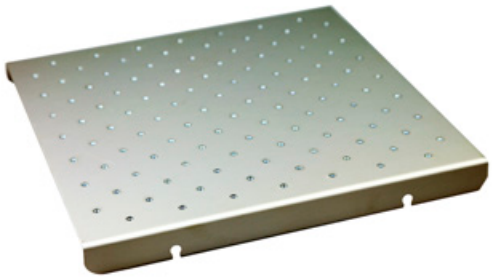
Sticky Pad for RS-OS 20


RSS-E 220

Maximum load for RSS-E 105/205 with fixing clips for Erlenmeyer Flasks

Fixing clips	25 mL	50 mL	100 mL	250 mL	500 mL
RSS-E 105	18	18	9 (12)*	6 (8)*	4 (5)*
RSS-E 205	28	28	16	9 (12)*	9

* Erlenmeyer Flasks overlapping


RSS-E 105/205

Incubation Shaker IS-OS 20 • IS-OS 25

2 years warranty

IS-OS 20

- forced recirculation
- spring-loaded shelf included
- adjustable safety temperature
- cover made of 8 mm acrylic glass
- extensive range of accessories

Technical Data	IS-OS 20	IS-OS 25	IS-OS 30
Temperature range / resolution	RT +5 to 60 °C / 0.1 °C		4 to 60 °C / 0.1 °C
Temperature homogeneity at 37°C	± 0.5 °C		
Temperature variation at 37°C	± 0.1 °C		
Timer	99:59 min / continuous operation		
Shaking speed	40 … 300 rpm		
Amplitude of platform movement	20 mm		
Capacity (Erlenmeyer Flasks)	7 x 500 ml 4 x 1,000 ml	12 x 500 ml	
Dimension platform	320 x 320 mm	450 x 450 mm	
Power	500 W	1,000 W	1,300 W
Dimension	500 x 610 x 470 mm	610 x 950 x 540 mm	
Material of hood / thickness	Plexiglas / 8 mm		
Weight	40 kg	55 kg	90 kg
Adjustable safety temperature	yes		
Recognition open hood	yes		
Voltage • Frequency	230 VAC • 50/60 Hz		

Incubation Shaker IS-OS 30

IS-OS 30

- forced recirculation
- spring-loaded shelf included
- adjustable safety temperature
- cover made of 8 mm acrylic glass
- extensive range of accessories

2 years warranty

Max. load for the spring-loaded shelf

	IS-OS 20	IS-OS 25/30
Erlenmeyer flasks 250 ml	9	12
50 ml Flacon-tubes	25	37

Max. load of base plate

	IS-OS 20	IS-OS 25/30
Erlenmeyer flasks 50 ml	28	49
Erlenmeyer flasks 100 ml	23	36
Erlenmeyer flasks 250 ml	13	18
Erlenmeyer flasks 500 ml	8	16
Erlenmeyer flasks 1,000 ml	4	9
Erlenmeyer flasks 2,000 ml	1	4

Incubation Shaker Accessories

ISS-E 200	attachment with 4 clamping rolls for IS-OS 20
ISS-E 205	base plate to be used with fixing clips for IS-OS 20
ISS-E 220	dish attachment with non-slip mat for IS-OS 20
ISS-E 300	attachment with 4 clamping rolls for IS-OS 30
ISS-E 305	base plate to be used with fixing clips for IS-OS 30
ISS-E 320	dish attachment with non-slip mat for IS-OS 30
ISS-E 130	fixing clip for Erlenmeyer flask 100 ml volume
ISS-E 135	fixing clip for Erlenmeyer flask 200/250 ml volume
ISS-E 140	fixing clip for Erlenmeyer flask 500 ml volume
ISS-E 145	fixing clip for Erlenmeyer flask 1,000 ml volume
ISS-E 150	fixing clip for Erlenmeyer flask 2,000 ml volume

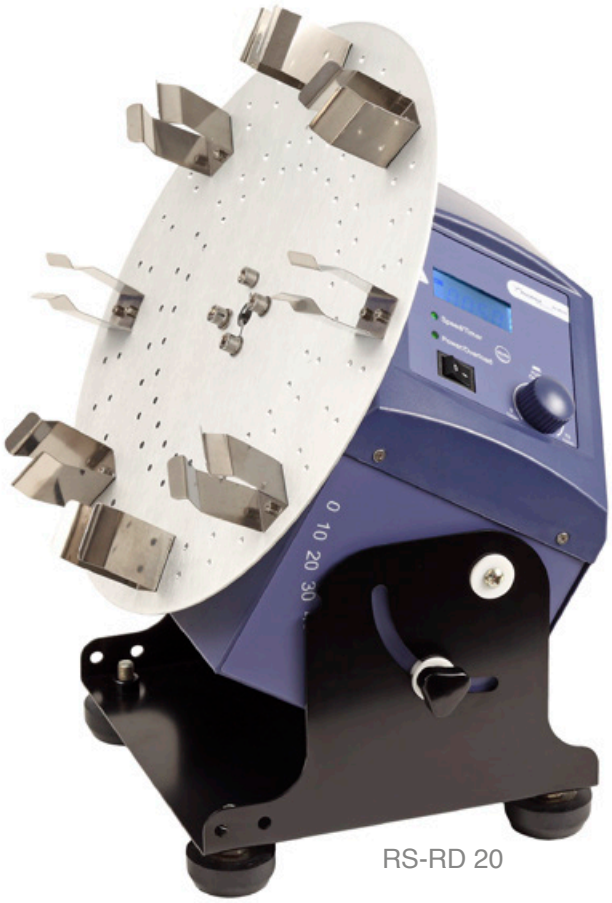
Rotator RS-RR 20 and Disk Mixer RS-RD 20

2 years warranty

RS-RR 20

RS-RR 20 • RS RD 20

- instrument will be supplied incl. tube holder (RS-RR20) or disk mixer (RS-RD 20)
- dual-Use - rotator RS-RR 20 can also be used as disk mixer
- fix stand with anti-slipping feet
- backlit display to adjust speed and time
- comprehensive range of accessories



RS-RD 20

Technical Data	RS-RR 20	RS-RD 20
Movement	Rotation	Rotation Disk
Rotation angle	-	0 - 90 °
Speed	10 - 70 rpm	
Timer-function	yes	
Operation	Timer / Continous	
Dispaly Speed / Time	LCD / LCD	
Adjustment Speed / Time	digital / digital	
Dimension	510 x 190 x 260 mm	250 x 190 x 260 mm
Protection class	IP 21	
Power	40 W	
Voltage • Frequency	100 - 240 VAC • 50/60 Hz	
Weight	8.9 kg	5.8 kg

Analog Rotator and Disk Mixer RS-RR 5 • RS-RD 5

RS-RR 5 • RS-RD 5

- accessories for 1.5/2 ml, 15 ml and 50 ml tubes are included
- variable Speed
- compact construction
- adjustable feet
- easy to clean

2 years warranty

RS-RR 5

RS-RD 5

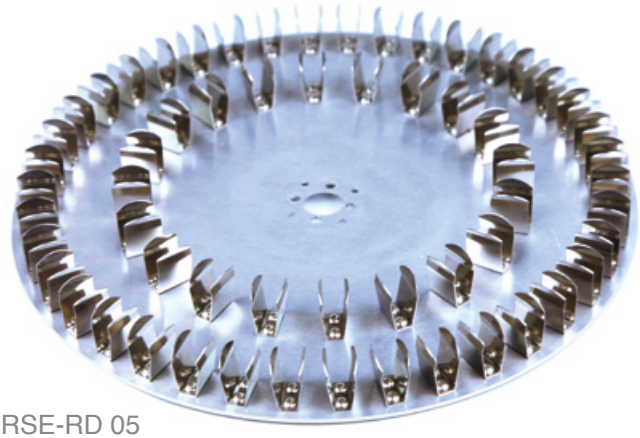
Maximum assembling RS-RR 5 and RS-RD 5

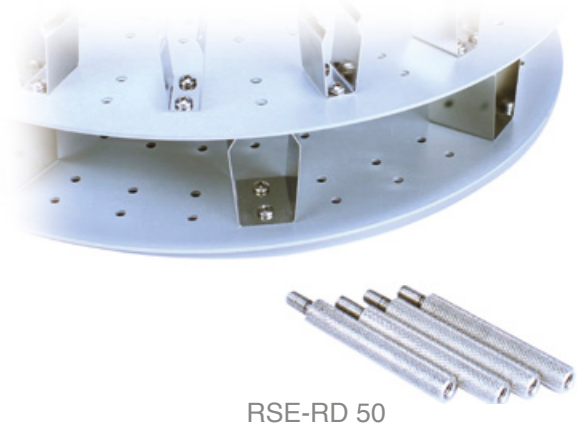
Fixing clips	1.5 / 2 ml	15 ml	50 ml
RS-RR 5	34	20	12
RS-RD 5	48	8	8

Technical Data	RS-RR 5	RS-RD 5
Movement	Rotation	Rotation Disk
Rotation angle	-	fix angle
Speed	5 - 80 rpm	
Timer-function	-	
Operation	continous	
Dispaly Speed / Time	Scala / Scala	
Adjustment Speed / Time	analog / analog	
Dimension	530 x 150 x 190 mm	2,200 x 300 x 310 mm
Protection class	IP 21	
Power	20 W	
Voltage • Frequency	100 - 240 VAC • 50/60 Hz	
Weight	2.9 kg	3.1 kg

Rotator and Disc Mixer Accessories

RSE-RR 05	Rotator module for RS-RR 20, 48 x 1.5 ml tubes, horizontal mixing
RSE-RR 10	Rotator module for RS-RR 20, 24 x 15 ml tubes, horizontal mixing
RSE-RR 15	Rotator modul for RS-RR 20, 24 x 50 ml tubes, horizontal mixing
RSE-RR 25	Rotator modul for RS-RR 20, 32 x 1,5 ml tubes, vertical mixing
RSE-RR 30	Rotator modul for RS-RR 20, 16 x 15 ml tubes, vertical mixing
RSE-RR 35	Rotator modul for RS-RR 20, 16 x 50 ml tubes, vertical mixing
RSE-RD 05	Disk modul for RS-RD 20, 60 x 1.5 ml tubes
RSE-RD 10	Disk modul for RS-RD 20, 16 x 15 ml tubes
RSE-RD 15	Disk modul for RS-RD 20, 8 x 50 ml tubes
RSE-RD 50	Adapter to use several disk modules
RSE-RD 20	12 x 1.5/2 ml holding clips for RS-RR 5 and RS-RD 5
RSE-RD 22	12 x 15 ml holding clips for RS-RR 5 and RS-RD 5
RSE-RD 24	12 x 50 ml holding clips for RS-RR 5 and RS-RD 5


RSE-RD 05


RSE-RD 50

RSE-RR 5

RSE-RR 25

Tube Roller RS-TR 5 / RS-TR 10

RS-TR 5

RS-TR 5 / RS-TR 10

- gentle mixing
- easy to use
- easy cleaning
- timer function (RS-TR 10 only)
- LCD display (RS-TR 10 only)

2 years warranty

RS-TR 10

Technical Data	RS-TR 5	RS-TR 10
Movement	Rocking amd rolling	
No. of rolls / Length	6 / 280 mm	
Amplitude	24 mm	
Speed	20 - 70 rpm	10 - 70 rpm
Motor	DC, brushless	
Timer-function	-	yes
Operation	continous	Timer / continous
Display Speed / Time	Scale	LCD / LCD
Adjustment Speed / Time	analog / -	digital / digital
Dimension	260 x 490 x 110 mm	
Protection class	IP 21	
Power	25 W	30 W
Voltage • Frequency	100 - 240 VAC • 50/60 Hz	
Weight	5.5 kg	5.6 kg

Vortexer RS-VF 10 • RS VA 10 and Micro Plate Mixer RS-MM 10

RS-MM 10

- compact Mixer suitable for 96er Micro titer plates
- adjustable speed
- various top frames available for RS-MM 10

2 years warranty

RS-VF 10 • RS-VA 10

- touch- or continuous
- variable speed 0 - 2,500 rpm (RS-VA 10)
- anti-slipping feet
- various top frames available for RS-VA 10
- sturdy cast housing

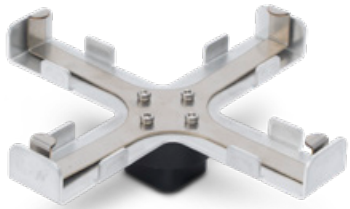
Technical Data	RS-VF 10	RS-VA 10	RS-MM 10
Shaking movement	orbital		
Amplitude	4 mm		4.5 mm
Speed	2,500 rpm	100 - 2,500 rpm	50 - 1,500 rpm
Speed adjustment	-	knob	knob
Max. load	-		0.5 kg
Dimension	127 x 160 x 130 mm		150 x 80 x 260 mm
Protection class acc. EN60529	IP 21		
Dimension	155 x 215 x 100 mm		180 x 320 x 108 mm
Weight	3.5 kg		
Voltage • Frequency	100 - 240 VAC • 50/60 Hz		

Vortexer and Microplate Mixer - Accessories

RSV-E 10	Universal top plate for tubes and vessels up to 30 mm Ø for Vortexer
RSV-E 12	Holding bar for RSV-E 20 – 40
RSV-E 15	100 mm plate with rubber mat for RSV-E 20-40, RSV-E 44
RSV-E 18	DNA -attachment 20 Tubes 10,5 mm Ø, Material PP
RSV-E 20	Adapter for 48 Tubes 6 mm Ø, to be used with RSV-E 15
RSV-E 21	Adapter for 56 Tubes 5 mm Ø, 7 x PCR-Strips, to be used with RSV-E 15
RSV-E 25	Adapter for 15 Tubes 10 mm Ø, to be used with RSV-E 15
RSV-E 26	Adapter for 12 Tubes Ø 9,8 mm (1.5/2 ml), 12 Tubes Ø 6.6 mm (0.5 ml), 12 Tubes Ø 5 mm (0.2 ml) to be used with RSV-E 15
RSV-E 30	Adapter for 12 Tubes 12 mm Ø, to be used with RSV-E 15
RSV-E 35	Adapter for 8 Tubes 16 mm Ø, to be used with RSV-E 15
RSV-E 40	Adapter for 8 Tubes 20 mm Ø, to be used with RSV-E 15
RSV-E 41	Adapter for 4 Tubes 28 mm Ø (50 ml), to be used with RSV-E 15
RSV-E 42	Tube-Adapter horizontal, 4 x 0.5 - 15 ml
RSV-E 43	Attachment for Erlenmeyer flasks 100 - 250 ml
RSV-E 44	Universal top plate for tubes and vessels up to 99 mm Ø for Vortexer
RSV-E 46	Rubber foot
RSV-E 50	Attachment for micro plate mixer to be used with RSV-E20-40, RSV-E44
RSV-E 55	Microtiterplate-attachment for one plate for RS-MM 10
RSV-E 57	Microtiterplate-attachment for two plates for RS-MM 10
RSV-E 60	Vortexer universal attachment for tubes and vessels up to 99 mm Ø incl. RSV-E 15
RSV-E 65	Vortexer attachment with Microtiterplate RSV-E55

RSV-E 15

RSV-E 20-40


RSV-E 42

RSV-E 43

RSV-E 44

RSV-E 65

New Digital Vortexer RS-VA 20 and RS-VA 30

We are proud to introduce our new digital infrared Vortexer RS-VA30, an outstanding combination of reliability and innovational strength for a wide range of applications in all types of laboratories.

The advanced design concepts results in a stylish and elegant appearance of the Vortexer. The digital interface provides real-time speed and time display, allowing users to easily set and monitor mixing parameters. Its stable operation ensures uniform sample mixing, making it ideal for a variety of application.

RS-VA 20

- Adjustable speed ranges from gentle to vigorous mixing to suit various needs
- LCD-screen displays real-time speed and time for easy adjustment and monitoring
- Stable with pressure-mounted accessories to prevent slippage and splashing
- Brushless DC motor for high stability and maintenance-free operation
- Sturdy base ensures stability during operation for safety

2 years warranty

RS-VA 30

- Compatible for a wide range of adapter for tubes and microplates
- Stable operation and sturdy construction
- Real time LCD display, Timer function
- Hands-free operation by IR-supported activation of the device
- Brushless motor, adjustable, wide speed range up to 3,000 rpm

Technical Data	RS-VA 20	RS-VA 30
Shaking Movement	orbital	
Amplitude	4 mm	4.5 mm
Speed	100 - 3,000 rpm	
Speed/Time adjustment	knob	
Display	LCD	
Operating Mode	IR, continous	Touch, continous
Time range	1 s - 99 min 59 s	
Dimension (LxWxH)	150 x 140 x 140 mm	205 x 165 x 90 mm
Protection class	IP 21	
Weight	2.5 kg	3.9 kg
Power Supply	100 - 240 V • 50/60 Hz	

Accessories Vortexer RS-VA 20 and RS-VA 30

RSV-E 70 Universal attachment for tubes and vessels up to 30 mm Ø, for RS-VA30
RSV-E 71 Universal attachment for tubes and vessels up to 30 mm Ø, for RS-VA20
RSV-E 72 Universal attachment for tubes and vessels (Standard)

RSV-E 70

RSV-E 71

RSV-E 72

RSV-E 74 Tube-Adapter horizontal, 4 x 0,5 - 15 ml
RSV-E 75 Attachment for Erlenmeyer flasks 100 - 250 ml, max. 1500rpm
RSV-E 76 Base plate for attachments RSV-E 77 - RSV-E 81

RSV-E 74

RSV-E 75

RSV-E 76

RSV-E 77 25 Tubes Ø 4,5 mm (0,1 - 0,5 ml), to be used with RSV-E 76
RSV-E 78 21 Tubes Ø 8 mm (1,5 - 2 ml), to be used with RSV-E 76
RSV-E 79 16 Tubes Ø 10 mm (2 - 5 ml), not applicable for 5 ml conical tubes, to be used with RSV-E 76
RSV-E 80 8 Tubes Ø 14 mm (10 - 15 ml), also applicable for 5 ml conical tubes, to be used with RSV-E 76
RSV-E 81 4 Tubes Ø 25,5 mm (50 ml), to be used with RSV-E 76
RSV-E 82 19 Tube Ø 9 mm (2 ml Cryovials), to be used with RSV-E 76

RSV-E 77

RSV-E 78

RSV-E 79

RSV-E 80

RSV-E 81

RSV-E 82

RSV-E 83 8 Vials Ø 17 mm (5 ml Vails), to be used with RSV-E 76
RSV-E 84 6 Vials Ø 20,5 mm (10 ml Vails), to be used with RSV-E 76
RSV-E 85 4 Vials Ø 26,5 mm (20 ml Vails), to be used with RSV-E 76
RSV-E 86 4 Vials Ø 26,5 mm (30 ml Vails), to be used with RSV-E 76V

RSV-E 83

RSV-E 84

RSV-E 85

RSV-E 86

Accessories Vortexer RS-VA 20 and RS-VA 30

RSV-E 89 Microtiter plate insert, compatible with full-skirt PCR plates, cell culture plates, deep-well plates, etc.

RSV-E 89

RSV-E 89

RSV-E 91 Horizontal mounting plate, rectangular with mounting clamps, 24 x 1.5 ml
RSV-E 92 Horizontal mounting plate, rectangular with mounting clamps, 8 x 15 ml
RSV-E 93 Horizontal mounting plate, rectangular with mounting clamps, 4 x 50 ml

RSV-E 91

RSV-E 92

RSV-E 93

RSV-E 94 Horizontal mounting plate, round, with mounting clamps, 24 x 1.5 ml
RSV-E 95 Horizontal mounting plate, round, with mounting clamps, 12 x 15 ml
RSV-E 96 Horizontal mounting plate, round, with mounting clamps, 6 x 50 ml

RSV-E 94

RSV-E 95

RSV-E 96

RSV-E 97 1,5 ml vertical Rack, 24 × 1.5 ml, incl. 24 holding clamps
RSV-E 98 15 ml vertical Rack, 12 × 15 ml, incl. 24 holding clamps
RSV-E 99 50 ml vertical Rack, 12 × 50 ml, incl. 24 holding clamps

RSV-E 97

RSV-E 98

RSV-E 99

RSV-E 100 24 x 1,5 ml holding clamps for RSV-E 91, RSV-E 94 and RSV-E 97
RSV-E 101 24 x 15 ml holding clamps for RSV-E 92, RSV-E95 and RSV-E 98
RSV-E 102 24 x 50 ml holding clamps for RSV-E 93, RSV-E 96 and RSV-E 99

Overhead Stirrer RSO-20/40 (analog and digital)

RSO-40D

RSO-20/40A

- digital speed readout
- stepless speed adjustment
- sturdy construction
- very quiet operation
- safety circuit

RSO-20/40D

- digital stirrer with LCD-display
- microprocessor-controlled speed accuracy
- smooth start procedure
- selectable display of speed/torque
- RS 232 Interface

2 years warranty

RSO-20A

Technical Data	RSO-20A	RSO-40A	RSO-20D	RSO-40D
Max. stirring quantity (H_2O)	20 L	40 L	20 L	40 L
Speed	50 - 2,200 rpm, stepless			
Speed accuracy	-	-	±3	±3
Speed dispaly	LED	LED	LCD	LCD
Max. viskosity	10,000 mPas	50,000 mPas	10,000 mPas	50,000 mPas
Max. torque	30 Ncm	60 Ncm	30 Ncm	60 Ncm
ø Chuck range	0.5 - 10 mm			
Push trough shaft	yes			
Fastening on stand	Extension 16 mm			
Torque dispaly	no		yes	
Dimension	82 x 220 x 186 mm			
Weight	2.5 kg	3.5 kg	2.5 kg	3.5 kg
Protection class	IP 42			
Motor rating input	70 W	130 W	70 W	130 W
Motor rating output	50 W	100 W	50 W	100 W
Voltage • Frequency	200 - 240 VAC • 50/60 Hz			

Digital Overhead Stirrer RSO-300D and RSO-500D

The newly developed Overhead Stirrer RSO-300D and RSO-500D feature an attractive design, enhanced performance and a competitive price, making them an excellent choice for various laboratory applications. The LCD screen displays real-time parameters such as speed, torque, time and temperature.

It is widely used in various fields such as chemical synthesis, materials science, food processing, petrochemicals, etc, and is the best choice for laboratories and research institutions. The new instruments includes a timer function and a connection for an external temperature sensor.

RSO-300D / RSO-500D

- Sturdy construction, quiet operation
- Timer function
- Connector for external Temperature sensor
- Safety lock to prevent accidental change of operation
- Constant speed, automatically adjusted
- Can be switched forward and reverse

2 years warranty

RSO-300D

RSO-500D

Technical Data	RSO-300D	RSO-500D
Max. stirring quantity (H_2O)	30 L	50 L
Speed	50 - 2,200 rpm	
Time setting range	0 - 99 h 59 min	
Max. torque	40 Ncm	60 Ncm
Max. viscosity	10,000 mPas	50,000 mPas
Display	LCD	
Motortype	Brushless DC-motor	
Rotation	forward, reverse	
Chuck clamp range diameter	0,5 - 10 mm	
Data interface	RS 485, Type C, USB	
Voltage • Frequency	100 - 240 VAC • 50/60 Hz	
Power	70 W	130 W
Ambient conditions	5 - 40 °C, 80 % RH	
Protection class	IP 42	

Overhead Stirrer - Accessories

RSO-E 07	Plate stand
RSO-E 08	Sturdy H-Stand
RSO-E 10	Propeller stirrer with 4 blades, stirrer diameter 50 mm, shaft diameter 8 mm, shaft length 400 mm
RSO-E 11	Paddle stirrer, stirrer diameter 70 mm, shaft diameter 8 mm, shaft length 400 mm
RSO-E 12	Propeller stirrer with a flexible blade, stirrer diameter 60 mm, shaft diameter 8 mm, shaft length 400 mm
RSO-E 13	Centrifugal stirrer, stirrer diameter 90 mm, shaft diameter 8 mm, shaft length 400 mm
RSO-E 20	Propeller stirrer PTFE-coated with 4 blades, stirrer diameter 65 mm, shaft diameter 6 mm, length 350 mm
RSO-E 21	Propeller stirrer PTFE-coated with 2 blades, stirrer diameter 70 mm, shaft diameter 6 mm, length 350 mm
RSO-E 22	Paddle stirrer PTFE-coated, stirrer diameter 70 mm, shaft diameter 6 mm, length 350 mm
RSO-E 23	Centrifugal stirrer PTFE-coated, stirrer diameter 90 mm, shaft diameter 6 mm, length 350 mm
RSO-E 30	Strap clamp for vessels up to 200 mm, incl. Boss head clamp
RSO-E 31	Cross Sleeve
RSO-E 32	Dissolver stirrer, stirrer diameter 100 mm, shaft diameter 8 mm, shaft length 600 mm
RSO-E 33	Anchor stirrer, stirrer diameter 60 mm, shaft diameter 8 mm, shaft length 400 mm
RSO-E 34	Anchor stirrer large, stirrer diameter 100 mm, shaft diameter 8 mm, shaft length 600 mm
RSO-E 35	Spiral stirrer, stirrer diameter 50 mm, shaft diameter 8 mm, shaft length 400 mm
RSO-E 36	Paddle stirrer, large, stirrer diameter 100 mm, shaft diameter 8 mm, length diameter 600 mm

RSO-E07

RS0-E10

RS0-E11

RS0-E12

RS0-E13

Thermoshaker RS-TS 5 and RS-TS10

RS-TS 10

RS-TS 5 / RS-TS 10

- quick change of blocks due to magnetic holder
- automatic block recognition
- 9 programs
- efficient mixing
- precise temperature control
- heating and cooling function (depending on model)
- Wide range of block
- easy calibration

2 years warranty

Technical Data	RS-TS 5	RS-TS 10
Functions	Heating & mixing	Heating, cooling & mixing
Temp. range	RT to 99.9 °C	15 °C below RT to 99.9 °C
Temperature accuracy	±0.5 °C	
Overheat protection	150 °C	
Timer	0 min - 99.5 h	
Max. Heating speed	5.5 °C / min	
Max. Cooling speed	5 °C / min (100 °C-RT)	
Max. Cooling speed	-	0.5 °C / min (below RT)
Speed range	200 - 1,500 rpm	
Mixing orbit	3-orbital	
Adjustment Speed / Time	digital	
Dimension	200 x 235 x 120 mm	
Weight	7.3 kg	
Voltage • Frequency	200 - 240 VAC • 50/60 Hz	

Thermoshaker - Accessories

		Hole (d x h)	Max. Speed	Lid
TSB-10	Heating block 24 x 0.5 ml	8.1 x 36 mm	1,500 rpm	yes
TSB-15	Heating block 24 x 1.5 ml conical	10.9 x 30.8 mm	1,500 rpm	yes
TSB-20	Heating block 24 x 2 ml	10.9 x 30.8 mm	1,500 rpm	yes
TSB-25	Heating block 8 x 5 ml	13.6 x 42 mm	1,500 rpm	no
TSB-30	Heating block 8 x 5 ml, conical	17 x 51.5 mm	1,400 rpm	yes
TSB-35	Heating block 8 x 15 ml	16.9 x 80 mm	800 rpm	no
TSB-40	Heating block 4 x 50 ml	29.6 x 80 mm	600 rpm	no
TSB-45	Heating block 96 well PCR Plates without frame		1,500 rpm	yes
TSB-50	Heating block 96/384 Mikrotiter plate		1,500 rpm	yes

TSB-10

TSB-25

TSB-40

TSB-15

TSB-30

TSB-45

TSB-20

TSB-35

TSB-50

Centrifuges

Mini-Centrifuge CD-1008

The CD-1008 is a small and powerful mini centrifuge which fits on every laboratory bench. Compact, small and very quiet running (<45 dB) is it the ideal instrument for small analysis. For safety reasons it is running only with a closed lit.

CD-1008 G (green), **CD-1008 B** (blue)

- Two lid colors, green and blue
- Max. speed of 7,000 rpm
- Comes with 2 ml x 8 and PCR8 x 2 rotors
- Dual door interlock design
- DC motor drive
- Quiet running, noise level ≤45 dB
- The rotor is seated on a tapered shaft which facilitates easy removal
- Ideal for quick spin downs and micro filtration
- The centrifuge starts and stops by closing and opening lid or using the on/off switch

2 Years Warranty

Accessories

CD08-8-2	Rotor, 8 x 1.5/2 ml
CD08-2-PCR8	Rotor, 2 x 8 x 0.2 ml PCR
CD08-A02	Adapter, 2 ml to 0.2 ml, 8 pcs
CD08-A05	Adapter, 2 ml to 0.5 ml, 8 pcs

Technical Data	CD-1008
Speed	7,000 rpm
Max. RCF	2,680 g
Time	continous
Noise	<45 dB (A)
Dimension	15 x 15 x 12 cm
Weight	0.5 kg
Max. capacity	8 x 2 ml
Shipping includes	CD 08-2, CD 02-PCR 8
Voltage • Frequency	100 - 240 V • 50/60 Hz
Power	20 W

Mini-Centrifuge CD-1012

This centrifuge is ideal for quick spins, microfiltration of samples, cell separations and many other routine laboratory procedures.

CD-1012

- Max. Speed 10,000 rpm (7,490 g)
- OLED display may switch speed and time;
- DC motor drive smooth and quiet operation.
- Safe, endurable and robust rotor with clamp locking design easy to operate
- Wide voltage technology the speed is not affected by voltage fluctuations high speed accuracy.
- Compatible with 0.5/1.5/2 mL × 12 tubes +4 × PCR8 strips 0.2 mL × 44 PCR tubes.
- Central button can adjust the motor speed and supports soft braking and instant stop modes
- Simple appearance and structure, only weight 1.5 kg

CD-1012

2 Years Warranty

Technical Data	CD-1012
Speed	2,000 - 10,000 rpm
Increment	1.000 rpm steps
Max. RCF	6,708 g, 1.5/2 ml; 6,596 - 7490 g, PCR8 stripes
Capacity	12 x 0.5/1.5/2 mL, 4×PCR8 strips, 44 x 0.2 mL PCR tubes
Runtime	10 sec - 20 min
Noise	<58 dB (A)
Dimension (D x W x H)	210 x 180 x 130 mm
Weight	1.5 kg
Shipping includes	Rotor and adapter
Voltage • Frequency	100 - 240 V • 50/60 Hz
Power	40 W

Low Speed Centrifuge CD-0506

The new centrifuge CD-0506, supplied with a built in fixed angle rotor which can hold up to 6 tubes each 15 ml / 10 ml / 7 ml / 5 ml / 1.5/2 ml. It is widely used for blood or urine separation in medical routine practice in hospitals, clinics or research institutes.

CD-0506

- Speed range from 300 - 5,000 rpm
- Rotor speed can be set and displayed by rpm or G-force
- Defined program by knob will be stored and activated when power on
- Two programs P1/P2, easy to start the procedure by one key
- Two deceleration speeds setting to meet different requirements
- Easy-to-read processing display and sound alert
- Automatic lid-lock release after running
- Maintenance-free brushless DC motor
- Rotor and Adapter included

2 Years Warranty

CD-0506

Technical Data	CD-0506
Speed	300 - 5,000 rpm
Increment	10 rpm
Max. RCF	2,600 g
Timer	0.5-99 minutes, continous
Noise	< 54 dB (A)
Dimension (DxWxH)	24 x 30 x 18 cm
Weight	5.2 kg
Max. Capacity	6 x 15 ml
Rotor	54° fix angle
Safety	Door interlock, overspeed detector, automatic internal diagnosis
Voltage • Frequency	100 - 240 V • 50/60 Hz
Power	70 W
Shipping includes	Rotor and adapter

Accesories

CD05-6-15	Rotor, 6 x 15 ml for CD-0506
CD05-4-50	Rotor, 4 x 50 ml for CD-0506
CD05-A2	Adapter for 1.5/2 ml, 6 pcs
CD05-A5	Adapter for 3/5 ml, 6 pcs

Adapter
CD05-A2 and CD05-A

Centrifuge CD-0412-50

Whether in environmental, biological or analytical laboratories - in all areas of the laboratory world there is a need to centrifuge samples up to 50 ml quickly and cost-effectively.

With the CD-0412-50, Phoenix Instrument offers exactly the right centrifuge for these requirements. The rotor has 6 holes for 15 ml tubes and 6 holes for 50 ml tubes. This means that it can be universally equipped with either 15 ml plastic tubes or 50 ml plastic tubes.

CD-0412-50

CD-0412-50

- Fix angle rotor (54°) for 6 x 50 ml or 6 x 15 ml
- Automatic self-diagnosis to control all functions
- backlit LCD-display for easy-read out of parameter such as Speed, RCF and time
- easy, intuitive operation
- Timer function 0.5 - 99 minutes
- Timer starts after the selected speed is reached
- Quick spin function
- Lid with electric lock and automatic release function to save processing time and prevent sample overheating
- Maintenance free brushless motor

2 Years Warranty

Technical Data	CD-0412-50
Speed	300 - 4,000 rpm
Increment	100 rpm steps
Max. RCF	1,800 g
Timer	0.5 - 99 minutes, continous
Noise	<54 dB (A)
Dimensions	30 x 35 x 20 cm
Weight	6 kg
Capacity	6 x 15 ml or 6 x 50 ml
Rotor	54° fix angle
Voltage • Frequency	100 - 240 V • 50/60 Hz
Power	70 W
Shipping includes	CD-A6-50P

Accesories

CD-A6-50P	Rotor 6 x 15 ml or 6 x 50 ml
CD04-R50P	Plastic tubes with round bottom, 50 ml

High Speed Micro Centrifuges CD-2012

High speed micro-centrifuge range is widely used in physical and chemistry analysis, biochemistry, cellular and molecular biology, clinical Labs and blood donation centers, and is ideal for high-end research applications: Sedimentation of cells and viruses, Separation of sub-cellular organelles, Isolation of macromolecules such as DNA, RNA, proteins or lipids.
The CD2012 is a high speed micro centrifuge with a 12-place rotor for 1.5 / 2ml tubes - or smaller through the use of adapters. The brushless DC motor drives quickly and effortlessly up to a maximum speed of 15,000 rpm. Easy control and handling is guaranteed by clearly arranged operating knobs and the backlit display.

2 Years Warranty

CD-2012

CD-2012

- Max. speed of 15,000 rpm (increment 100 rpm)
- The max. RCF is 15,100 g
- User-friendly large LCD display shows running information
- Both RPM or G-force can be set and displayed
- The parameters can be modified after the set speed is reached
- Time from 0.5 - 99 minutes or continuous
- Easy-to-read display and sound alerts
- Conforms to all international standards and regulation
- max. Capacity 12 x 2 ml (Rotor incl in delivery)
- Dimensions: 26 x 25 x 14 cm
- Weight: 6 kg

Accessories

CD12-2P	Rotor with lit, 12 x 1.5 / 2 ml
CD12-A02	Adapter, 2 ml to 0.2 ml, 24 pcs
CD12-A05	Adapter, 2 ml to 0.5 ml, 24 pcs

Technical Data	CD-2012
Speed	15,000 rpm
Increment	100 rpm steps
Max. RCF	15,100 g
Timer	0.5-99 minutes, continous
Noise	< 56 dB (A)
Dimension (DxWxH)	24 x 30 x 18 cm
Weight	6 kg
Max. Capacity	12 x 2 ml
Voltage • Frequency	100 - 240 V • 50/60 Hz
Power	100 W
Shipping includes	CD 12-2P

24 Place High Speed Micro Centrifuge CD-3024

The high speed Micro centrifuge CD-3024 has a capacity of 24 x 2 ml, 18 x 5 ml or 36 x 0.5 ml. Easy handling and control is guaranteed with the backlit LCD-Display and the clear operation panel.
For safety reasons the centrifuges are equipped with dual door interlock, self-control of speed and temperature. All rotors are bio-safe and the centrifuges are manufactured in accordance with all international standards and regulations.

CD-3024

CD-3024

- Self diagnostic, control of speed and temperature
- User-friendly large LCD display shows running information
- Both RPM or G-force can be set and displayed
- The parameters can be modified after the set speed is reached
- The short spin function is used for quick spins by pressing and holding PULSE key
- Timer starts once the target speed reached, for accurate separation time
- Rotor CD24-24-2 included in the delivery

2 Years Warranty

Accesories

CD12-A02	Adapter, 2 ml to 0.2 ml, 24 pcs.
CD12-A05	Adapter, 2 ml to 0.5 ml, 24 pcs.
CD24-A02-36	Adapter, 0.5 ml to 0.2 ml, 36 pcs.
CD24-18-5	Rotor with lid for CD-3024, 18 x 5 ml, aerosol-tight
CD24-12-5V	Rotor with lid for CD-3024, 12 x 5 ml (conical), aerosol-tight
CD24-24-2	Rotor with lid for CD-3024, 24 x 1,5/2 ml, aerosol-tight
CD24-36-05	Rotor with lid for CD-3024, 36 x 0,5 ml, aerosol-tight
CD24-4-PCR8	Rotor with lid for CD-3024, 4 x 8 x 0,2 ml PCR

Technical Data	CD-3024
Speed	200 - 15,000
Increment	10 rpm steps
Max. RCF	21,380 g
Timer	0.5 - 99 minutes, continous
Noise	< 54 dB (A)
Dimension (DxWxH)	28 x 36 x 26 cm
Weight	12 kg (without rotor)
Max. Capacity	18 x 5 ml, 24 x 2 ml, 36 x 0.5 ml
Voltage • Frequency	200 - 240 V • 50 Hz
Power	100 W
Shipping includes	CD 24-24-2

Refrigerated High Speed Centrifuge CD-3124R

The new refrigerated high speed Micro centrifuge CD-3124R has a capacity of 24 x 2 ml, 18 x 5 ml or 36 x 0.5 ml. Easy handling and control is guaranteed with the backlit LCD-Display and the clear operation panel.

For safety reasons the centrifuges are equipped with dual door interlock, self-control of speed and temperature. All rotors are bio-safe and the centrifuges are manufactured in accordance with all international standards and regulations.

CD-3124R

CD-3124R

- automatic lid locking
- Pre-cooling system
- environmentally friendly cooling unit
- Maximum speed also below 4 °C
- 9 programme memory locations
- bio-safe rotors, lid with 3-fold safety device
- Aluminium rotors autoclavable at 121 °C
- rotors from 0.2 - 5 ml available
- Condensate tank
- high safety standard
- MCA test by TÜV Rheinland
- Acceleration and deceleration time: 25s↑ / 25s↓, adjustable in 9 steps
- Rotor CD24-24-2 (24 x 2 ml) included

2 Years Warranty

Technical Data	CD-3124R
Speed / Increment	200 - 15,000 rpm / 100 rpm steps
Max. RCF	21,380 g
Timer	30 s - 99 min, continous
Capacity	24 x 1.5/2 ml, 36 x 0.5 ml, 12 x 5 ml, 18 x 5 ml, 4 x 8 x 0.2 ml
Temperature	-20 to +40 °C
Dimension (WxDxH)	34 x 56 x 29 cm
Weight	30 kg
Noise	< 56 dB (A)
Voltage • Frequency	200 - 240 V • 50/60 Hz
Power	500 W
Shipping includes	CD24-24-2 (24 x 2 ml)

Accessories

CD12-A02	Adapter, 2 ml to 0.2 ml, 24 pcs.
CD12-A05	Adapter, 2 ml to 0.5 ml, 24 pcs.
CD24-A02-36	Adapter, 0.5 ml to 0.2 ml, 36 pcs.
CD24-18-5	Rotor with lid for CD-3124, 18 x 5 ml
CD24-12-5V	Rotor with lid for CD-3124, 12 x 5 ml
CD24-24-2	Rotor with lid for CD-3124, 24 x 1.5/2 ml
CD24-36-05	Rotor with lid, 36 x 0.5 ml
CD24-4-PCR8	Rotor with lid, 4 x 8 x 0.2 ml PCR

Clinical Centrifuge CD-0412

Conforms to international safety standards and regulations. The clinical centrifuges have passed the explosion-proof test and marked with CE, TUV and FCC. MCA test according to IEC/EN61010-2-20 including explosion-proof and bio-safe tests.

Passed EN61010-2-101:2002 particular requirements for in vitro diagnostic (IVD) medical equipment. High strength plastic rotor and excellent balance technology to guarantee a quiet and stable operation.

Dual protection casing provides safe and reliable running. Brushless motor drive quickly and effortlessly accelerates the rotor to set speed.

2 Years Warranty

CD-0412

CD-0412

- CPU controls all operating parameters including speed and time
- High accuracy of speed, excellent performance
- Operation can be timed from 30 seconds to 99 minutes or continuous running
- Timer commences once the set speed is reached, so the eparation time is more accurate
- Gentle braking at low speeds with efficient separation

Accesories

CD04-8-15	Rotor, 8 x 15 ml
CD04-A15	Adapter, 12 pcs
CD04-A15 plug	Adapter-mat, 12 pcs

Technical Data	CD-0412
Speed	300 - 4,500 rpm
Increment	100 rpm steps
Max. RCF	2,490 g
Timer	0,5 - 99 min, continous
Capacity	6 x 15 ml or 12 x 10 ml
Dimension (DxWxH)	26 x 25 x 14 cm
Weight	6 kg
Noise	< 54 dB (A)
Voltage • Frequency	100 - 240 V • 50/60 Hz
Power	70 W
Shipping includes	CD04-8-15

Centrifuge CD-0424

The new multi-purpose centrifuge CD-0424 is versatile and can be used in applications from clinical to biochemical for qualitative analysis of serum, plasma, blood, and urine.

CD-0424

CD-0424

- Maximum up to 4000rpm Speed can be set in RPM/RCF, with 3 customizable routines programs (Blood, Urine & Fecal)
- 3 acceleration level & 4 level deceleration
- Maximum capacity 50 mL × 4, Suitable for different sizes of blood collection tubes and centrifuge tubes for both, swing-out and fix angle rotor
- Quiet, compact, and convenient with Easy-to-read LCD display
- Automatic internal diagnosis and self-detection
- Maintenance-free brushless DC motor.

2 Years Warranty

Accesories

CD-S6-15	Swing rotor for CD-0424, 6 x 15 ml, max. 4,000 rpm
CD-S4-50	Swing rotor for CD-0424, 4 x 50 ml, max. 4,000 rpm
CD-24-15P	Fix angle rotor for CD-0424, 24 x 15 ml, max. 4,000 rpm
CD-A8-15P	Fix angle rotor for CD-0424, 8 x 15 ml, max. 4,000 rpm
CD-15-P30	Adapter 50 ml to 15 ml, for Tubes 17 x 120 mm and 13/16 x 100 mm Tubes, 4 pcs.
CD-15-P22	Adapter 15 ml to 13/16 x 100 mm, 24 pcs.
CD-A5-P17	Adapter 15 ml to 5 ml, 13 x 75 mm, 24 pcs.
CD-A2-P17	Adapter to 2 ml, 24 pcs.

Technical Data	CD-0424
Speed	500 - 4,000 rpm
Increment	100 rpm steps
Max. RCF	2,500 g
Timer	1 - 99 minutes, continous
Noise	< 62 dB (A)
Dimension (DxWxH)	37 x 44 x 27 cm
Weight	14.5 kg
Max. Capacity	4 x 50 ml
Rotor	Fix angle or swing rotor
Safety	Door interlock, overspeed detector, automatic internal diagnosis
Voltage • Frequency	100 - 240 V • 50/60 Hz
Power	70 W
Shipping includes	4 x 50 ml swing rotor and adapter

Hematocrit Centrifuge CH-1424

Hematocrit centrifuge with CH-24-HR rotor is used for determination of volume fractions of erythrocytes in blood and also for separation of micro blood and solution.

Hematocrit centrifuge with CH24-24-2 rotor is used for extraction of DNA and RNA.

CH-1424

CH-1424

- Speed range of 200-14,000 rpm, max. RCF 18,260 g
- Two rotors, hematocrit rotor with max. capacity 24 capillary tubes and 2 ml × 24 rotor
- Precise control speed and time with efficient separation
- Self diagnostic, control of speed and temperature
- User-friendly large LCD display shows running information
- Both RPM or G-force can be set and displayed

2 Years Warranty

Technical Data	CH-1424
Speed	200 - 12,000 rpm
Increment	10 rpm steps
Max. RCF	18,260 g
Timer	0.5 - 99 minutes, continous
Noise	< 60 dB (A)
Dimension (DxWxH)	28 x 36 x 26 cm
Weight	10 kg (without rotor)
Max. Capacity	24 x capillary, 24 x 1.5/2 ml
Rotor	Hematocrit rotor: 24 x capillary
Voltage • Frequency	100 - 240 V • 50/60 Hz
Power	160 W
Shipping includes	CH24-H

Accesories

CH24-HR	Hematocrit rotor with lid and reading disk, 24 x capillary tubes
CH24-24-2	Rotor with lid, 24 x 1,5/2 ml
CD12-A02	Adapter, 2 ml to 0,2 ml, 24 Pcs
CD12-A05	Adapter, 2 ml to 0,5 ml, 24 Pcs

Liquid Handling

Pipettes, Dispensers, Aspiration Systems

Pipetting is one of the most important tasks in the laboratory.

Our new pipettes and pipette filler as well as the new Dispenser and Vacuum Aspiration systems offer a high level of ease of use at a very good price/performance ratio and the user must abstain neither from precision nor from an ergonomic design.

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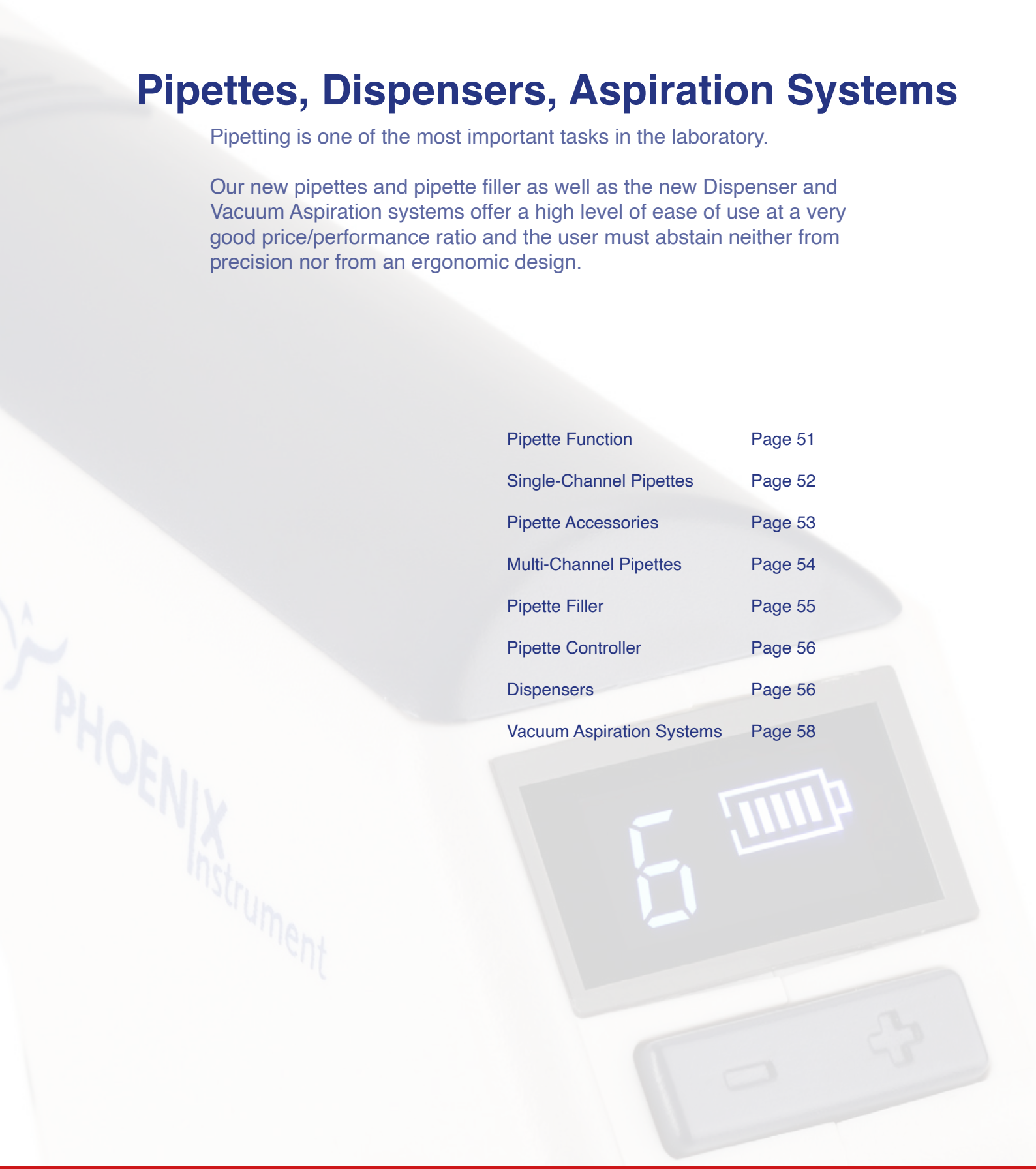


Variable and Fix Pipettes • Single & Multichannel Pipettes

Pipetting is one of the most important tasks in the laboratory. The new pipettes and pipette filler from PHOENIX INSTRUMENT offer a high level of ease of use at a very good price/performance ratio and the user must abstain neither from precision nor from an ergonomic design.

Phoenix Pipettes

- lightweight, ergonomic, low force design
- suitable for both left and right-handed users
- easy to calibrate and maintain with tool supplied
- calibration certificate according to DIN ISO 12650
- easy volume adjustment
- smooth tip ejection
- compatible with a wide range of tips

Volume Display

Single Channel Pipettes LHP2

2 Years Warranty

Single Channel Pipettes LHP2-F fix volume, autoclavable

Model	Volume (µl)	Inaccuracy (+/- in %)	Impression (< %)
LHP2-F5	5	1.30	1.20
LHP2-F10	10	0.80	0.80
LHP2-F20	20	0.60	0.50
LHP2-F25	25	0.50	0.30
LHP2-F50	50	0.50	0.30
LHP2-F100	100	0.50	0,30
LHP2-F200	200	0.40	0.20
LHP2-F250	250	0.40	0.20
LHP2-F500	500	0.30	0.20
LHP2-F1000	1,000	0.30	0.20
LHP2-F2000	2,000	0.30	0.15
LHP2-F5000	5,000	0.30	0.15

Single Channel Pipettes LHP2-V variable volume, autoclavable

Model	Volume (µl)	Inaccuracy (+/- in %)	Impression (< %)
LHP2-V01	0.1 -2.5	3.00	3.00
LHP2-V05	0.5 - 10	1.50	1.50
LHP2-V2	2 - 20	1.20	1.00
LHP2-V5	5 - 50	0.90	0.60
LHP2-V10	10 - 100	1.00	0.40
LHP2-V20	20 - 200	0.80	0.30
LHP2-V50	50 - 200	0.80	0.30
LHP2-V100	100 - 1,000	0.70	0.25
LHP2-V200	200 - 1,000	0.70	0.25
LHP2-V1000	1,000 - 5,000	0.60	0.30
LHP2-V2000	1,000 - 10,000	1.20	0.30

Measurements for all variable pipettes are made in the minimum, mean and maximum volume.
The data shown are based on the mean volume.

HiPette - Fully Autoclavable Mechanical Pipette LHP3

The new generation of fully autoclavable manual pipettes from Phoenix Instrument are particularly notable for its ergonomic design and very low weight.
They are fully autoclavable and have a high chemical resistance thanks to the materials used. The volume lock protects against accidental volume changes.

HiPette

- Ergonomic design
- Lightweight
- Low force required
- UV-resistant plastic
- Volume range from 0.1µl to 10 ml
- Simple, lockable volume setting
- Fully autoclavable at 121 °C
- Color-coded
- Can be calibrated by the user
- Complies with ISO8655 DIN12650

Pipette Tips

LHP-PS 10	Pipette Tips 0.5 - 20 µl , bag á 1,000 pcs
LHP-PS 12	Pipette Tips 1 - 200 µl yellow, bag á 1,000 pcs
LHP-PS 14	Pipette Tips 100 - 1000 µl blue, bag á 1,000 pcs
LHP-PS 16	Pipette Tips 1.0 - 5.0 ml, bag á 300 pcs
LHP-PS 18	Pipette tips 1.0 - 10.0 ml, bag á 100 pcs

Pipette Filters

LHF-20	Filter for LHP3-V01, LHP3-V05 u. LHP3-V2, 50 Stck/Pkg
LHF-50	Filter for LHP3-V5, 50 pcs/bag
LHF-100	Filter for LHP3-V10, 50 pcs/bag
LHF-300	Filter for LHP3-V100, LHP3-V500, 50 pcs/bag
LHF-1.000	Filter for LHP3-V100, LHP3-V500, 50 pcs/bag
LHF-10.000	Filter for LHP3-V1000 und LHP3-V2000, 50 pcs/bag

Pipette Stands

LHP-PS01	Pipette stand linear, for 5 pipettes
LHP-PS02	Pipette stand round, for 6 pipetts

Single Channel Pipettes HighPette LHP3 variable volume, autoclavable

Model	Volume (µl)	Inaccuracy (+/- in %)	Impression (< %)
LHP3-V01	0.1 - 2.5	2.50	1.5
LHP3-V05	0.5 - 10	1.50	0.8
LHP3-V2	2 - 20	1.20	0.60
LHP3-V5	5 - 50	1.40	0.8
LHP3-V10	10 - 100	1.00	0.30
LHP3-V20	20 - 200	1.00	0.30
LHP3-V30	30 - 300	1.00	0.30
LHP3-V100	100 - 1,000	1.00	0.20
LHP3-V500	500 - 5,000	0.60	0.30
LHP3-V1000	1 - 10 ml	0.80	0.20
LHP3-V2000	2 - 10 ml	0.80	0.20

Measurements for all variable pipettes are made in the minimum, mean and maximum volume.
The data shown are based on the mean volume.

12- and 8- Channel Pipettes

LHP2-1220

2 Years Warranty

12-Channel Pipettes
variable volume, autoclavable

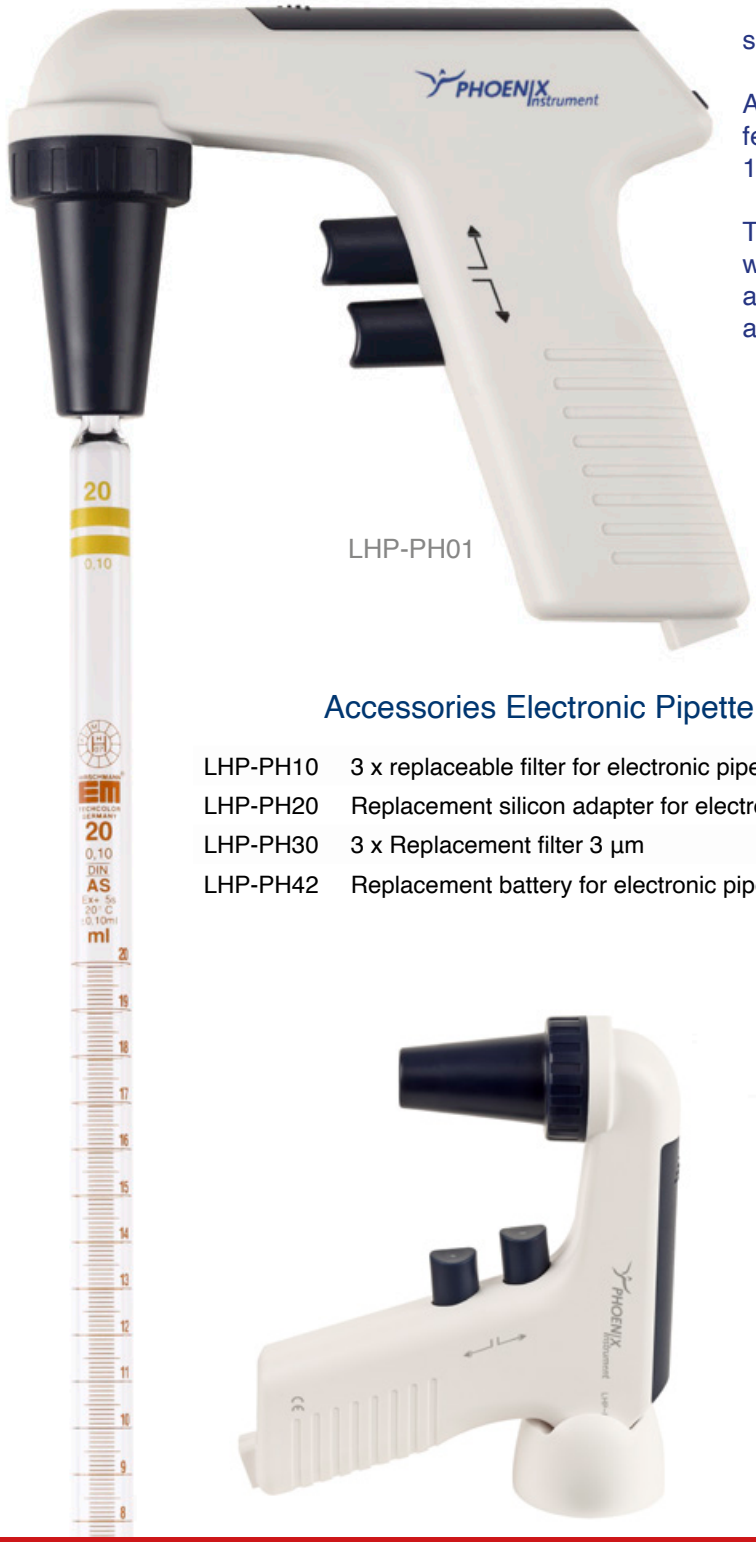
Model	Volume (µl)	Inaccuracy (+/- in %)	Impression (< %)
LHP2-1210	0.5 -10	2.50	2.50
LHP2-1220	5 - 50	1.50	1.00
LHP2-1230	50 - 300	1.00	0.50
LHP2-1240	10 - 100	1.00	0.80

8-Channel Pipettes
variable volume, autoclavable

Model	Volume (µl)	Inaccuracy (+/- in %)	Impression (< %)
LHP2-810	0.5 -10	2.50	2.50
LHP2-820	5 - 50	1.50	1.00
LHP2-830	50 - 300	1.00	0.50
LHP2-840	10 - 100	1.00	0.80
LHP2-850	100 - 1000	2.00	0.50

Digital Volume Setting

LHP-PH01 • Electonic Pipette Filler for all Pipettes up to 100 ml



LHP-PH01

The strong pump of the LHP-PH 01 offers 6 different aspirate speeds. The LCD-Display indicates the speed as well as the status of the rechargeable battery.

Aspiration and discharging will be controlled by two different knobs. The capacity of the strong accu is approx. 12 hours without charging.

The controler is equipped with a built-in hydrophob filter which is replaceable. A fatigue-proof over hours is not a problem. The units are delivered with charging cable and holder.

Accessories Electronic Pipette Filler

LHP-PH10	3 x replaceable filter for electronic pipette filler, 0,45 µm
LHP-PH20	Replacement silicon adapter for electronic pipette filler
LHP-PH30	3 x Replacement filter 3 µm
LHP-PH42	Replacement battery for electronic pipette filler

LED-Display

2 Years Warranty

Technical Data	LHP-PH01
Aspirate speed	6, Display via LED
Battery	Li/Ion-battery, charging time approx. 2 h
Battery run time	Approx. 12 h (normal conditions)
Pipette type	Glas and plastic up to 100 ml
Display	LED to diplay speed and battery status
Filter	0,45 µm hydrophob

Pipette Controller for all Pipettes up to 100 mL
LHP-PH02 / 03 / 04 / 05

The well-priced pipette controller can be used for all pipettes up to 100 ml. Robust, but lightweight, easy to use and allow comfortable and precise pipetting.
It has an integral and replaceable 3 µm filter.

2 Years Warranty

Model	
LHP-PH02	blue
LHP-PH03	red
LHP-PH04	green
LHP-PH05	yellow

Dispenser

The dispensers covers a volume range of 0.5 - 50 ml. They have an excellent chemical resistance and are fully autoclavable at 121 °C. Easy to clean and maintain.

Fully autoclavable

Model	
LHD-V05	Dispenser 0.5 - 5 ml with adapter GL 25-45
LHD-V1	Dispenser 1-10 ml with adapter GL 25-45
LHD-V2	Dispenser 2.5 - 25 ml with adapter GL 25-45
LHD-V5	Dispenser 5 - 50 ml with adapter GL 25-45

Premium Bottle-Top Dispenser LHD-Plus

New developed and designed for safe, sturdy & stable dispensing directly from the bottle in the range of volumes up to 100 ml

Features

- High chemical compatibility with use of inert materials and glass/PTFE piston
- Easy to disassemble and clean for periodic maintenance
- Fully autoclavable at 121 °C to ensure sterility
- Available in 5 dispensing volume ranges from 0.5 mL to 100 mL
- Supplied with most popular adapters (S40, GL32, GL38, GL25, GL28)
- Fast, precise, and reproducible volume locking mechanism on a clear scale
- Reagent recovery function reduces reagent waste and prevents dripping when not in use
- 6 adapters to comfortably fit most laboratory reagent bottles
- Adjustable aspirating tube for different bottle height

Model	
LHD-V05 Plus	Dispenser 0.5 - 5 ml with adapter GL 25-45
LHD-V1 Plus	Dispenser 1-10 ml with adapter GL 25-45
LHD-V2 Plus	Dispenser 2.5 - 25 ml with adapter GL 25-45
LHD-V5 Plus	Dispenser 5 - 50 ml with adapter GL 25-45
LHD-V10 Plus	Dispenser 10 -100 ml with adapter GL 25-45

Vacuum Aspiration System VAS-10

The new Vacuum Aspiration system VAS-10 is ideal for aspiration of liquids from all kind of vessels. The 4-Liter Aspiration bottle is autoclavable and can easily be removed from the system by the quick opening device. The integrated fluid level control prevents the over ow of the bottle. The maximum vacuum pressure of 600 mbar is free adjustable and adapts the system for many application.

Accessories
(included in VAS-10 and VAS-ECO)

VAS-E 20	1-chanel stainless steel tip 60 mm, Φ 1.5 mm
VAS-E 21	1-channel stainless steel tip 60 mm, Φ 2.5 mm
VAS-E 25	1-channel stainless steel tip 120 mm, Φ 1.5 mm
VAS-E 26	1-channel stainless steel tip 120 mm, Φ 2.5 mm
VAS-E 30	8-channel stainless steel tip 60 mm
VAS-E 35	200 µl tip adapter
VAS-E 36	1000 µl tip adapter
VAS-E 40	200 µl tip adapter, 8-channel

Technical Data	VAS-10
Vacuum (adjustable)	0 to -600 mbar
Aspiration volume air	15 l/min
Aspiration volume fluid	17 ml/s
Dimension	180 x 240 x 450 mm
Weight	3 kg
Voltage	100-240 VAC, 50/60 Hz
Bottle volume	4 Liter PE, autoclavable

Vacuum Aspiration System VAS-ECO

The new VAS-ECO extraction system is the low-cost alternative for all laboratory applications. Thanks to its compact design, the VAS-ECO fits in any fume cupboard and on any workbench.
The manual control unit can be flexibly at the touch of a button or in 2-stage continuous operation and the maximum negative pressure of 600 mbar can be freely adjusted. This allows it to be adapted to all tasks.

VAS-ECO

- Infinitely adjustable vacuum
- Extensive range of accessories
- compact design and 2 liter autoclavable bottle
- easy switching between manual and continuous suction
- the hydrophobic filter prevents contamination by aerosols and liquids
- Quiet, brushless motor

Additional Accessories
(VAS-10 and VAS-ECO)

VAS-E 05	Handset without accessories
VAS-E 10	Bottle for VAS-10, 4 Liter autoclavable
VAS-E 11	Cap for VAS-10 komplete
VAS-E 12	Bottle for VAS-ECO, 2 Liter autoclavable, incl. cap
VAS-E 20	1-channel stainless tip 60 mm, Φ 1.5 mm
VAS-E 21	1-channel stainless tip 60 mm, Φ 2.5
VAS-E 25	1-channel stainless tip 120 mm, Φ 1.5 mm
VAS-E 26	1-channel stainless tip 120 mm, Φ 2.5 mm
VAS-E 30	8-channel stainless tip 60 mm
VAS-E 35	200 µl tip adapter
VAS-E 36	1,000 µl tip adapter
VAS-E 40	200 µl tip adapter, 8-channel
VAS-E 42	Filter 0.45 µm, 1 pc.

VAS-ECO

Technical Data	VAS-ECO
Vacuum (adjustable)	0 - 500 mbar
Aspiration volume air	15 l/min
Aspiration volume fluid	17 ml/s
Dimension	180 x 240 x 340 mm
Weight	2.8 kg
Voltage	100-240 VAC, 50/60 Hz
Bottle volume	2 Liter PE, autoclavable

Temperature Instruments

Ovens, Water Baths, Climatic Chambers

Ideal for everyday use in the processes of drying, sterilization and sample preparation, the ovens, incubators, water baths climatic chambers etc. are characterized by an accurate temperature control, great reliability and easy handling.

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Super Series

New generation of color touch screen display with user friendly screens and icons - 8 programs storable with 8 steps each one recordable data on USB support with flash drive supplied for all ovens and incubators (except model TIN-TN30).

All on board

Color touch screen display for the selection of the various functions.

All parameters on a single screen: temperature, fan speed, time, program number and step, USB pendrive presence, date and time.

Easy to use

Simply and intuitive setting of all the operating parameters thanks to icons and symbols easy to understand.

The capacitive display ensures touch sensitivity and precision even when wearing gloves.

Programs

Professional controller equipped with 8 storable programs with 8 steps each one and a further basic program (PROG 0) with a single step.

Simple programming of all work steps in a single screen.

Safety of us

Settings menu with 3 access levels:

1 free and 2 protected by password to avoid accidental changes to “sensitive” machine parameters.

Recording and downloading data

Work cycles are automatically stored inside the instrument, always available for download thanks to the USB port.

With an USB flash drive inserted, registration takes place without capacity limits.

Incubators and Ovens Basic Series

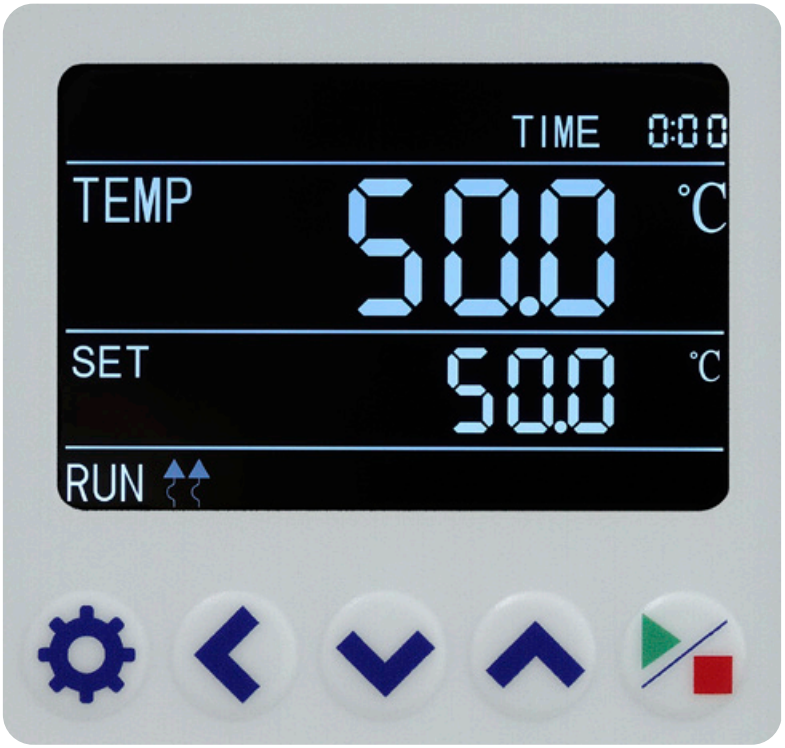
New version of Basic controller - 8 programs with 8 steps each one wide backlit LCD display easy setting of all operating parameter.

The Incubator and ovens from Phoenix Instrument allow an easy setting of all operating parameters and optimal temperature control.

The large backlit display clearly shows in every moment the temperature set and that one inside as well as other parameters.

The introduction of user-friendly icons makes interpretation of the functions and commands extremely intuitive. Moreover, the limited number of adjustment keys ensures operability very simple and intuitive.

All our instruments are environmental-friendly with reduced power consumption and improved protection.
All instruments will be supplied with a calibration report.



Basic version

- 8 programs x 8 steps
- Repeatable working cycles
- Wide backlit LCD display
- Easy to read Icons
- Timer and continuous function
- Visual and sound alarm
- Fan speed control
- Program start delay
- Safety temperature for sample protection

Natural Convection Oven

From RT+5 (TIN-TN30: RT+10) to 300 °C

Ideal for everyday use in the processes of drying and sterilization, the natural convection ovens are characterized by a high load capacity and by the accurate temperature control.

The possibility to heat the samples up to 300 °C allows any type of sterilization process. The minimum heating times, the heating power properly dimensioned and the perfect tightness of the seals, ensure low energy consumption in every application.

Technical Data	TIN-TN30	TIN-TN50	TIN-TN115	TIN-TN200
Volume	30 Liters	50 Liters	115 Liters	200 Liters
Max. Temperature/Resolution	+200 / 0.1 °C	+300 / 0.1°C	+300 / 0.1°C	+300 / 0.1°C
Temp. homogeneity at 150 °C	±3.5 °C	±3.5 °C	±3.5 °C	±4 °C
Temperature variation at 150 °C	±0.5 °C	±0.5 °C	±0.5 °C	±0.7 °C
Heating time at 150 °C	14 min	16 min	18 min	20 min
Timer	99:59 / continuous operation			
Int. Dimension (WxHxD) in mm	320 x 320 x 285	400 x 420 x 330	520 x 495 x 450	650 x 640 x 495
No. of shelves (standard/max)	2/5	3/7	3/9	3/10
Min. distance between shelves	50 mm			
Max. load of shelves	10 kg	15 kg	20 kg	20 kg
Voltage / Power	230 V / 700 W	230 V / 1,000 W	230 V / 1,900 W	230 V / 2,100 W
Ext. Dimension (WxHxD) in mm	460 x 685 x 530	690 x 635 x 470	815 x 750 x 600	940 x 905 x 660
Weight	40 kg	53 kg	74 kg	103 kg
Safety class	3.1			

Forced Air Oven

from RT+10 to 300 °C

The forced air ovens TIN-TF 50, -TF 120,- TF 200 and -TF 400 control very efficiently the temperature starting from 10 °C above ambient temperature up to 300 °C.
The PID controller, with wide backlit color display, clearly shows in every moment the temperature set and that one inside as well as other parameters.

The forced air circulation, adjustable in three levels (High, Medium, Low), guarantees a perfect air replacement and homogeneity of temperature in every parts of the chamber.

A through hole of 5 mm diameter supplied as standard on the top side of the oven permits to introduce an external probe for the check or certification of the temperature.

Technical Data	TIN-TF50	TIN-TF120	TIN-TF200	TIN-TF400
Volume	50 Liters	120 Liters	200 Liters	400 Liters
Max. Temperature/Resolution	+300 / 0.1 °C			
Temp. homogeneity at 150 °C	±2%			
Temperature variation at 150 °C	±0.3 °C	±0.3 °C	±0.4 °C	±0.5 °C
Heating time at 150 °C	20 min	24 min	30 min	50 min
Timer	99:59 / continuous operation			
Int. Dimension (WxHxD) in mm	400 x 415 x 310	520 x 530 x 435	645 x 650 x 495	1000 x 800 x 500
No. of shelves (standard/max)	2/3	2/5	3/6	3/9
Min. distance between shelves	50 mm			
Max. load of shelves	15 kg	20 kg	20 kg	20 kg
Voltage / Power	230 V / 980 W	230 V / 1,900 W	230 V / 2,400 W	230 V / 3,200 W
Ext. Dimension (WxHxD) in mm	690 x 635 x 570	810 x 750 x 690	945 x 870 x 755	1285 x 1060 x 750
Weight	54 kg	74 kg	103 kg	160 kg
Safety class	3.1			

Natural Convection Incubators

from RT+5 to 70 °C

The organic materials used in the typical laboratory application require a constant and gentle heating. The temperature distribution in the incubators is obtained without forced air circulation but using only the natural convection, which does not stress the sample and allows its uniform growth.

The wide door glass window allows a constant check of the status of the samples inside the chamber without opening the door, thereby avoiding unnecessary heat loss and temperature changes.

Technical Data	TIN-IN16	TIN-IN35	TIN-IN55
Volume	16 Liters	35 Liters	55 Liters
Max. Temperature/Resolution	70 / 0,1 °C		
Temp. homogeneity at 150 °C	±0.4 °C	±0.4 °C	±0.5 °C
Temperature variation at 150 °C	±0.3 °C	±0.3 °C	±0.3 °C
Heating time at 150 °C	18 min	22 min	25 min
Timer	99:59 / continuous operation		
Int. Dimension (WxHxD) in mm	270 x 230 x 255	360 x 300 x 320	400 x 360 x 385
No. of shelves (standard/max)	2/3	2/5	2/5
Min. distance between shelves	25 mm	30 mm	50 mm
Max. load of shelves	5 kg	7.5 kg	10 kg
Voltage / Power	230 V / 85 W	230 V / 125 W	230 V / 250 W
Ext. Dimension (WxHxD) in mm	530 x 370 x 400	620 x 440 x 460	660 x 500 x 545
Weight	23 kg	33 kg	42 kg
Safety class	2		

Natural Convection Incubators with higher volumes

from RT+5 to 70 °C

Incubators with higher volume, thanks to the optimal placing of the heating elements, ensure high performance in homogeneity and stability of temperature and the proper incubation of the samples.

The difference from the smaller models is the presence of the double door, with the inner glass full-width, which ensures a perfect observation of the samples in the chamber without unnecessary heat losses.

Double Door

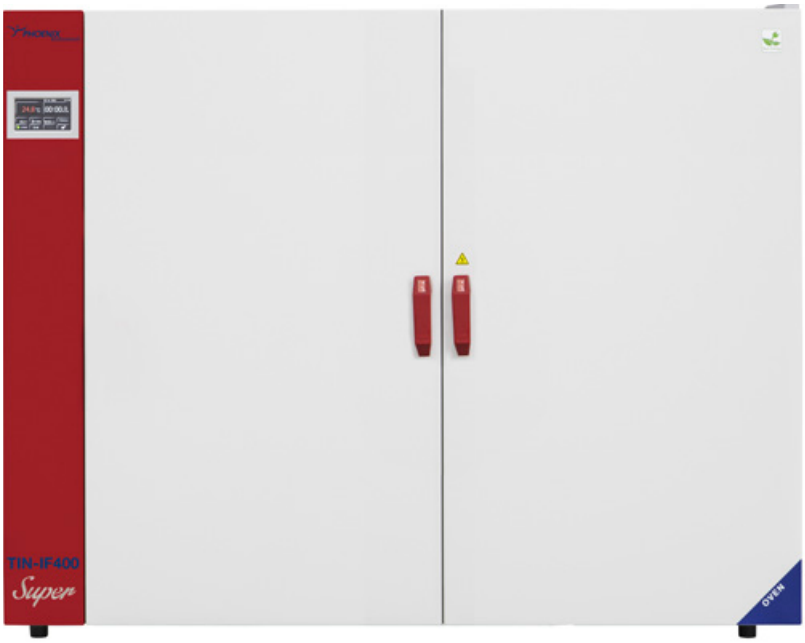
Technical Data	TIN-IN120	TIN-IN200
Volume	120 Liters	200 Liters
Max. Temperature/Resolution	+70/0,1°C	
Temp. homogeneity at 150 °C	±0.5 °C	±0.5 °C
Temperature variation at 150 °C	±0.3 °C	±0.3 °C
Heating time at 150 °C	30 min	35 min
Timer	99:59 / continuous operation	
Int. Dimension (WxHxD) in mm	520 x 460 x 500	610 x 600 x 575
No. of shelves (standard/max)	3/7	3/9
Min. distance between shelves	50 mm	
Max. load of shelves	10 kg	
Voltage / Power	230 V / 350 W	230 V / 600 W
Ext. Dimension (WxHxD) in mm	780 x 610 x 645	875 x 755 x 710
Weight	61 kg	77 kg
Safety class	2	

Forced Air Incubators

from RT+5 to 80 °C

Our new forced air incubators control the temperature up to 80 °C very efficiently. It's possible in addition, set a program at 130 °C which allows the thermally sterilization of the chamber. The full wide internal glass door ensures perfect observation of samples without unnecessary and expensive heat losses.

The forced ventilation, adjustable on three levels (High, Medium, Low) guarantees a perfect air exchange and an excellent temperature homogeneity in all points of the chamber.



Technical Data	TIN-IF55	TIN-IF120	TIN-IF200	TIN-IF400
Volume	57 Liters	120 Liters	200 Liters	400 Liters
Max. Temperature/Resolution	+80 / 0.1 °C			
Temp. homogeneity at 150 °C	±0.2 °C	±0.4 °C	±0.4 °C	±0.5 °C
Temperature variation at 150 °C	±0.1 °C	±0.1 °C	±0.2 °C	±0.3 °C
Heating time at 150 °C	30 min	40 min	45 min	55 min
Timer	99:59 / continuous operation			
Int. Dimension (WxHxD) in mm	400 x 350 x 415	520 x 530 x 435	645 x 650 x 495	1000 x 800 x 500
No. of shelves (standard/max)	2/5	3/7	3/9	3/10
Min. distance between shelves	50 mm			
Max. load of shelves	20 kg			
Voltage / Power	230 V / 350 W	230 V / 600 W	230 V / 700 W	230 V / 1,500 W
Ext. Dimension (WxHxD) in mm	690 x 620 x 650	810 x 750 x 690	945 x 870 x 755	1,285 x 1,060 x 750
Weight	56 kg	74 kg	103 kg	160 kg
Safety class	2	2		

Accessories

… for Ovens

TIN-1000142 Steel wire shelf for TN 30
TIN-1000192 Steel holed platform applicable to wire shelf for TN 30

TIN-1000102 Steel wire shelf for TN 50 / TF 50
TIN-1000152 Steel holed platform applicable to wire shelf for TN 50 / TF 50

TIN-1000112 Steel wire shelf for TN 115 / TF 120
TIN-1000162 Steel holed platform applicable to wire shelf for TN 115 / TF 120

TIN-1000122 Steel wire shelf for TN 200 / TF 200
TIN-1000172 Steel holed platform applicable to wire shelf for TN 200 / TF 200

TIN-1000132 Steel wire shelf for TF 400
TIN-1000182 Steel holed platform applicable to wire shelf for TF 400

Steel wire shelf and holed platform

… for Incubators

TIN-1001112 Steel wire shelf for IN 16
TIN-1001122 Steel wire shelf for IN 35
TIN-1001132 Steel wire shelf for IN 55
TIN-1001142 Steel wire shelf for IN 120 / IF 120
TIN-1001152 Steel wire shelf for IN 200 / IF 200
TIN-1000132 Steel wire shelf for IF 400

TIN-1000182 Steel holed platform applicable to wire shelf for IF 400

TIN-1001172 Wheels for all Incubators and Ovens, Set of 4 pcs.

Water Baths WB-5 / WB-12 / WB-22

from RT+5 to 99 °C

The waterbaths are generally used in the laboratory to maintain the temperature of the samples constant. The waterbaths WB series, thanks to the maximum operating temperature of 99 °C, meet the different needs of operators and therefore allow them to be used in numerous applications.

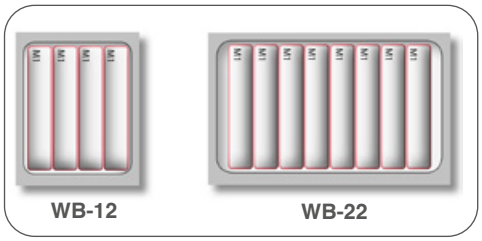
The model WB 22 pump ensures a faster and more uniform temperature distribution due to the recirculation pump which is equipped.

All water baths are equipped with a water drain.

WB-12 with rackTIN-1001822
(max. capacity 4 pcs.)

Technical Data	WB-5	WB-12	WB-22
Volume	5 Liters	12 Liters	22 Liters
Max. Temperature/Resolution	RT+5 to 99 °C / 0.1 °C		
Temp. homogeneity at 37 °C	±0.5 °C		
Temperature variation at 37 °C	±0.1 °C		
Overheating protection	yes		
Timer	99:59 / continuous operation		
Bottom plate Dimension (WxD)	270 x 120 mm	290 x 230 mm	470 x 290 mm
Max. number of Modules	2	4	8
Min. height with closed lid	150 mm		
Voltage / Power	230 V / 900 W		230 V / 1,100 W
Ext. Dimension (WxHxD) in mm	480 x 215 x 335	480 x 380 x 310	680 x 390 x 365
Weight	8 kg	12 kg	18 kg
Safety class	2		

Water drain



Maximum modules in place

Water Bath with Pump
from RT+5 to 85 °C

The models WB 22 and WB-40 with pump ensures a faster and more uniform temperature distribution due to the recirculation pump which is equipped.

Technical Data	WB-22-Pump	WB-40-Pump
Volume	22 Liters	40 Liters
Max. Temperature/Resolution	+85 °C / 0.1 °C	+85 °C / 0.1 °C
Temp. homogeneity at 37 °C	±0.2 °C	±0.5 °C
Temperature variation at 37 °C	±0.1 °C	±0.2 °C
Overheating protection	yes	
Timer	99:59 / continuous operation	
Bottom plate Dimension (WxD)	470 x 290 mm	620 x 380 mm
Max. number of Modules	8	16
Min. height with closed lid	150 mm	
Voltage / Power	230 V / 1,100 W	230 V / 2,200 W
Ext. Dimension (WxHxD) in mm	680 x 390 x 365	830 x 390 x 460
Weight	19 kg	28 kg
Safety class	2	

Inside the Chamber

Accessories for Water Baths

TIN-1001802 Rack 1 for tubes Ø 13 mm / 20 positions 1 Module
TIN-1001812 Rack 2 for tubes Ø 18 mm / 20 positions 1 Module
TIN-1001822 Rack 3 for tubes Ø 31 mm / 5 positions 1 Module
TIN-1001842 Rack 4 for tubes Ø 56 mm / 8 positions (biberon) 3 Modules
TIN-1001852 Rack 5 for blood bags / 5 positions 3 Modules
TIN-1001952 Becker support for WB-12, 4 rubber rings adapter
TIN-1001962 Becker support for WB-22, 8 rubber rings adapter

Becker support
TIN-1001952

Shaking Water Bath

from RT+5 to 99 °C

The new Water bath SB35 with linear shaking function. Bath, lid, spring basket and support surface for samples are made entirely of stainless steel. Thanks to the flexibility of the universal spring support it is possible to insert different types of flasks, beakers, balloons or other recipients of different capacities and shapes.

Electronic regulation of the temperature with PID control and adjustment of the shaking speed by knob.

The instrument comes with a practical emptying tube and quick-fit valve for the periodic replacement of the liquid in the tank.

The practical basket fixing system allows easy cleaning and maintenance of the tub.

Water Drain

Technical Data	SB-35
Tank Volume	35 Liters
Max. Temperature/Resolution	+99 °C / 0.1 °C
Temp. homogeneity at 37 °C	±1.0 °C
Temperature variation at 37 °C	±0.5 °C
Overheating protection	yes
Timer	99:59 / continuous operation
Shaking Speed	0 … 150 rpm
Amplitude of platform Movement	30 mm
Spring Basket Dimension (WxHxD)	320 x 115 x 200 mm
Min. height with closed lid	150 mm
Voltage / Power	230 V / 1.250 W
Ext. Dimension (WxHxD)	645 x 350 x 355 mm
Weight	28 kg
Safety class	2

Incubation Shaker IS-OS 20 • IS-OS 25

2 years warranty

IS-OS 20

- forced recirculation
- spring-loaded shelf included
- adjustable safety temperature
- cover made of 8 mm acrylic glass
- extensive range of accessories

Technical Data	IS-OS 20	IS-OS 25	IS-OS 30
Temperature range / resolution	RT +5 to 60 °C / 0.1 °C		4 to 60 °C / 0.1 °C
Temperature homogeneity at 37°C	± 0.5 °C		
Temperature variation at 37°C	± 0.1 °C		
Timer	99:59 min / continuous operation		
Shaking speed	40 … 300 rpm		
Amplitude of platform movement	20 mm		
Capacity (Erlenmeyer Flasks)	7 x 500 ml 4 x 1,000 ml	12 x 500 ml	
Dimension platform	320 x 320 mm	450 x 450 mm	
Power	500 W	1,000 W	1,300 W
Dimension	500 x 610 x 470 mm	610 x 950 x 540 mm	
Material of hood / thickness	Plexiglas / 8 mm		
Weight	40 kg	55 kg	90 kg
Adjustable safety temperature	yes		
Recognition open hood	yes		
Voltage • Frequency	230 VAC • 50/60 Hz		

Refrigerated Incubation Shaker IS-OS 30

IS-OS 30

- forced recirculation
- spring-loaded shelf included
- adjustable safety temperature
- cover made of 8 mm acrylic glass
- extensive range of accessories

2 years warranty

Max. load for the spring-loaded shelf

	IS-OS 20	IS-OS 25/30
Erlenmeyer flasks 250 ml	9	12
50 ml Flacon-tubes	25	37

Max. load of base plate

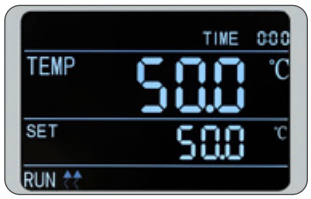
	IS-OS 20	IS-OS 25/30
Erlenmeyer flasks 50 ml	28	49
Erlenmeyer flasks 100 ml	23	36
Erlenmeyer flasks 250 ml	13	18
Erlenmeyer flasks 500 ml	8	16
Erlenmeyer flasks 1,000 ml	4	9
Erlenmeyer flasks 2,000 ml	1	4

Incubation Shaker Accessories

ISS-E 200	attachment with 4 clamping rolls for IS-OS 20
ISS-E 205	base plate to be used with fixing clips for IS-OS 20
ISS-E 220	dish attachment with non-slip mat for IS-OS 20
ISS-E 300	attachment with 4 clamping rolls for IS-OS 30
ISS-E 305	base plate to be used with fixing clips for IS-OS 30
ISS-E 320	dish attachment with non-slip mat for IS-OS 30
ISS-E 130	fixing clip for Erlenmeyer flask 100 ml volume
ISS-E 135	fixing clip for Erlenmeyer flask 200/250 ml volume
ISS-E 140	fixing clip for Erlenmeyer flask 500 ml volume
ISS-E 145	fixing clip for Erlenmeyer flask 1,000 ml volume
ISS-E 150	fixing clip for Erlenmeyer flask 2,000 ml volume

Circulation Baths

from -30 to +99.9 °C

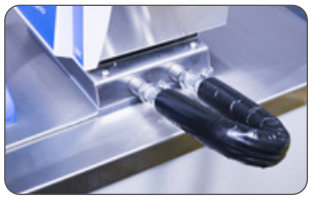


All on board

Backlit display for simultaneously displaying of the set temperature, and all other operating parameters.

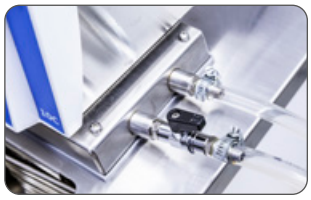
Precision

Precision PT100 probe and its inlet are standard supplied for an optimal temperature control of the external circuit. The instrument automatically recognizes the presence of the external probe



Ready to use

Pipe fittings, clamps and pipes with insulating material already supplied for an immediate use of the instrument.



External and internal

The instrument is equipped with an useful valve for selection of the external and internal circulation.

Easy maintenance

The frontal grill equipped by magnetic supports allows an easier cleaning and maintenance without the use of tools

Optimal space

The space inside the bath is fully usable thanks to optimal arrangement of the serpentine of cooling

Accessories

CB-1002302	Set of two pipes of 2 meter with insulation, working range -40 to +60 °C complete with metal clamps for fastening to the pipe fittings.
CB-1002312	Set of four swivel wheels, two of which can be braked.
CB-1002322	Premixed thermal fluid ready for use, working range -30 to +80 °C Tank box 5 litres with plastic tap.
CB-1000252	Temperature sensor PT100 model PT56 TFE with 3m teflon cable. Working Range -100 to +300 °C (including cable).

Circulation Baths CB-5-10; CB-5-20 and CB-5-30

from -30 to +99.9 °C

The new refrigerated/heating circulating baths are suitable for temperature controlling of samples in a wide range of temperatures.

All the models are designed for external and internal applications, usable for tests in laboratories and industries.

Each instrument is standard equipped with a PT100 probe for temperature control in an external circuit.

The controller automatically recognizes the presence of the probe and determines the type of work inside or outside the tank.

Large Backlit Display

Technical Data	CB 5-10	CB 5-20	CB 5-30
Temperature Range	-10 to 99.5 °C	-20 to 99 °C	-30 to 99 °C
Temperature Resolution/Setting	0.1 °C		
Temperature stability at 20 °C	±0.3 °C	±0.2 °C	±0.2 °C
Timer	99:59 / continuous operation		
Cooling Capacity			
(20 °C)	0.37 KW	0.41 KW	0.44 KW
(10 °C)	0.33 KW	0.37 KW	0.40 KW
(0 °C)	0.30 KW	0.33 KW	0.37 KW
(-10 °C)	0.22 KW	0.28 KW	0.32 KW
(-20 °C)		0.16 KW	0.20 KW
(-30 °C)			0.15 KW
Max. pump pressure	0.35 bar		
Max. pump flow rate	3.2 l/min	6.5 l/min	6.5 l/min
Bath volume	5 liter		
Bath opening depth	150 x 160 x 150 mm		
External Dimension (WxHxD) in mm	290 x 570 x 710	380 x 670 x 840	380 x 670 x 840
Voltage/Power	230 V / 50 Hz		
Weight	34 kg	54 kg	54 kg

Climatic Chambers

Operation Range: 10 °C to 70 °C / 45 to 95 %RH

The climatic chambers are the ideal instrument to do stability and aging test on materials, simulation of environmental conditions and stress test in several fields such as: industry, food, textile, packaging, rubber/plastics, etc.

Thanks to the digital control by PID regulator of the temperature and of the humidity percentage, it's possible simulate many environmental situations and use of materials, and moreover test the forced aging effects. The external steel door is equipped of a wide glass window that permits the observation of the materials during test.

The stainless steel chamber with rounded corners, the shelves and their fixing system completely removable, make the chamber perfectly cleanable. A LED inner lamp for observation of the samples is included.

The standard supplied side through hole of 25 mm diameter allows to install probes inside the chamber.
Digital backlit alphanumeric LCD screen. Digital timer, clock and date for GLP functions.

Standard supplied mini printer for operating and set parameters output. Safety class 3.1 with double digital limiter of temperature and additional fluid expansion limiter.

Technical Data	CH-150	CH-250
Useable Volume	150 Liters	250 Liters
Temperature Range	0 to 85 °C (without humidity)	+10 to 70 °C (with humidity)
Temperature Resolution	0.1 °C	
Temp. homogeneity in chamber	± 0.5 °C (without humidity)	± 1.5 °C (10 to 70 °C / 45 to 95% RH)
Temperature variation on a point	± 0.2 °C (without humidity)	± 0.5 °C (10 to 70 °C / 45 to 95% RH)
Humidity Range	55 % - 95 %	
Humidity variation on a point	≤ 2% RH (10 to 70 °C / 45 to 95 %RH	
Timer / programs	continuous mode / Programs 1-100 step	
Safety class	3.1	
Voltage / Power	230V / 2,200 W	
Internal Dimension (WxHxD)	550 x 670 x 405 mm	600 x 830 x 500 mm
Number of shelves (standard/max.)	3/10	3/12
Useful min. distance between shelves	45 mm	
Max. load of shelf	10 kg	15 kg
External Dimension (WxHxD)	690 x 1520 x 790 mm	740 x 1680 x 885 mm
External water tank dimensions (W x H x D)	370 x 340 x 560 mm	
Weight	145 kg	185 kg

Climatic Chambers

Operation range: 10 °C to 70 °C / 45 to 95 %RH

Accessories

CH-1001462	Steel wire shelf for climatic chamber CH 150
CH-1001472	Steel wire shelf for climatic chamber CH 250
CH-1000152	Hole Ø 25 mm complete of closing caps for climatic chambers CH 150/CH 250
CH-1000142	Hole Ø 50 mm complete of closing caps for climatic chambers CH 150/CH 250
CH-1009002	Paper Manual IQ/OQ

Cooled Incubator

Operation range: from 0 °C to 60 °C

The IC 150-R and IC 50-P (with Peltier Technology) refrigerated incubators combine state-of-the-art technology with precision and reliability and were developed specifically to meet the requirements of scientific, industrial, and research laboratories.

Thanks to the large viewing window on the IC 150-R and the inner glass door on the IC 50-P, you always have a clear view of your samples. Both models are equipped with a high-contrast 7-inch color touchscreen that enables intuitive navigation and real-time graphical visualization of temperature and other operating parameters.
A multi-level user management system comprises three access levels (User, Manager, Administrator) and thus ensures the protection of sensitive settings.

The internal data memory can be backed up to a USB flash drive via the USB interface.
Both devices comply with Safety Class 3.1 according to DIN 12880.

3 Years Warranty

Technical Data	IC-50-P	IC-150-R
Useable Volume	50 L	150 Liters
Temperature Range	+5 °C bis +60 °C (min. 20 °C < RT)	0 to 60 °C
Temperature Resolution	0.1 °C	
Temperature homogeneity at 25 °C	± 0.5 °C	
Temperature variation at 25 °C	± 0.1 °C	
Recovery time at 25 °C	8 minutes	4 minutes
Timer	99:59 min and continuous mode	
Safety class	3.1	
Voltage / Power	230 V / 500 W	230 V / 1,100 W
Internal Dimension (W x H x D)	340 x 335 x 440 mm	500 x 800 x 360 mm
Number of shelves (standard/max.)	2 / 5	3 / 9
Useful min. distance between shelves	50 mm	
Max. load of shelf	10 kg	
External Dimension (W x H x D)	600 x 600 x 700 mm	650 x 1350 x 620 mm
Weight	85 kg	100 kg

Refrigerator and Freezer TIN-FR / FZ

Professional laboratory refrigerators and freezers, with digital display and electronic control, temperature alarms, door sensor and manual/automatic defrost (automatic only on FR series). Smart refrigerated instruments, the internal parameters can be adjusted according to customers demands. The highly efficient compressors contain “environment friendly” ecological gases, free of CFCs and HCFCs, in compliance with the directive 2014/68 / EU.

The internal dynamic ventilation system guarantees the best conditions for the storage of even the most sensitive materials, in compliance with the EN 60068-3 standard.

Three levels of alarms: acoustic, visual and remote with 0 potential contact. The small-sized models (110 liters internal useful volume) are suitable for environments with limited spaces and can be placed under the counter.
All models are equipped with internal Full-LED light and reversible door, blind or glass (only in the FR-G versions) and with key lock. Models with a volume of 260 L are equipped with wheels.

TIN-FZ 110

3 Years Warranty

TIN-FR110G
with Glass Door

Technical Data	TIN-FR110 / TIN-FR110G	TIN-FR260 / TIN-FR260G	TIN-FZ110	TIN-FZ260
Volume	110 L	260 L	110 L	260 L
Temperature range	+2.0 to +8.0 °C	+2.0 to +8.0 °C	-25 to -10 °C	-25 to -10 °C
Resolution	0.1 °C	0.1 °C	0.1 °C	0.1 °C
Defrost function	Auto and manual	Auto and manual	manual	manual
Temperature variation in space	1.3 °C / 1.7 °C at 5 °C	1.9 °C / 2.2 °C at 5 °C	2.5 °C at 5 °C	2,1 °C at 5 °C
Gradient	1.3 °C / 1.7 °C at 5 °C	1.5 °C / 2.6 °C at 5 °C	1.5 °C at -20 °C	1.4 °C at -20 °C
Refrigreration	Dynamic (force ventilation)	Dynamic (force ventilation)	Dynamic (force ventilation)	Static (natural convection)
Door	closed / glass	closed / glass	closed	closed
Internal dimension	500 x 570 x 420 mm	500 x 1,290 x 420 mm	500 x 570 x 420 mm	500 x 1,290 x 420 mm
No. of shelves (standard/max)	3/3	6/7	3/3	6/7
Min. space between shelves	13 mm	13 mm	13 mm	13 mm
Max. load shelves	15 kg	15 kg	15 kg	15 kg
Ext. dimension	600 x 805 x 560 mm	600 x 1,525 x 560 mm	600 x 805 x 560 mm	600 x 1,525 x 560 mm
Weight	50 kg	75 kg	50 kg	75 kg
Voltage / Power	220-240 V / 120 W	220-240 V / 120 W	220-240 V / 120 W	220-240 V / 120 W

Digital Thermo Shaker RS-TS 5 / RS-TS 10

RS-TS 5 / RS-TS 10

3 Years Warranty

- Fully programmable (9 programs)
- Precise temperature control for heating and cooling
- Real-time display of speed, temperature and time
- Excellent mixing (200-1,500 rpm)
- Quick interchange of blocks without tools and automatic block recognition
- Block equipped with a lid for heat preservation
- Temperature self-calibration

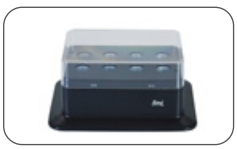
RS-TS 10

TSB-10

TSB-25

TSB-40

TSB-15


TSB-30

TSB-45

TSB-20

TSB-35

TSB-50

Technical Data	RS-TS 5	RS-TS 10
Movement	orbital	
Amplitude	3 mm	
Temperature range	RT+5 to 99.9 °C	RT-15 to 99.9 °C
Temp. accuracy	0.5 °C	
Max. heating speed	5.5 °C / min	
Max. cooling speed	5 °C / min	
	-	0.5 °C / min
Speed	200 - 1,500 rpm	
Motor	DC, brushless	
Programs	9	
Display	TFT	
Adjustment	digital	
Power	200 W	
Dimension	200 x 235 x 120 mm	
Weight	7.3 kg	
Voltage • Frequency	200 - 240 VAC • 50/60 Hz	

Accessories Thermo Shaker

		Hole (d x h)	Max. Speed	Lid
TSB-10	Heating Block 24 x 0.5 ml	8.1 x 36 mm	1,500 rpm	yes
TSB-15	Heating Block 24 x 1.5 ml	10.9 x 30,8 mm	1,500 rpm	yes
TSB-20	Heating Block 24 x 2 ml	10.9 x 30,8 mm	1,500 rpm	yes
TSB-25	Heating Block 8 x 5 ml	13.6 x 42 mm	1,500 rpm	no
TSB-30	Heating Block 8 x 5 ml, konical	17 x 51.5 mm	1,400 rpm	yes
TSB-35	Heating Block 8 x 15 ml	16.9 x 80 mm	800 rpm	no
TSB-40	Heating Block 4 x 50 ml	29.6 x 80 mm	600 rpm	no
TSB-45	Heating Block 96 well PCR plate borderless		1,500 rpm	yes
TSB-50	Heating Block 96/384 Mikrotiterplate		1,500 rpm	yes

Digital Dry Bath HB-100 and HB-100C

Digital Dry Bath HB100 with various interchangeable heating blocks is ideal for molecular biology, histology, clinical, environmental and industrial laboratories, including melting and boiling point determination, enzyme reactions, incubation and activation of cultures, immunoassays, DNA denaturation, culture media tests, coagulation tests, blood-urea-nitrogen determinations and in-situ hybridizations.

HB-100 with hood and heating block HB-E110

HB-100 • HB-100C

- A broad temperature range to 120 °C
- Calibratable (HB-110C)
- for a variety of applications
- Continuous and time operation
- Various types of optional block are available
- Over temperature protection

Technical Data	HB-100
Temperature range	RT+5 to 120 °C
Temperature Setting range	25 - 120 °C
Temperature control accuracy	±0.5°C
Temperature display accuracy	0.1 °C
Temperature uniformity at 37 °C	±0.5 °C
Time setting range	0 min …99h 59min
Power	160 W
Display	LED
Dimension (WxDxH)	175 x 290 x 85 mm
Weight	3 kg
Permissible ambient temp.	10 - 40 °C
Permissible ambient humidity	<80% RH
Voltage • Frequency	200 - 240 VAC • 50/60 Hz

Accessories Heating Block HB-100

		Ø (mm)	Depht (mm)
HB-E100	54 x 0.2 ml tubes conical	5.4	15
HB-E105	40 x 0.5 ml tubes conical	8.2	26.4
HB-E108	40 x 1.5 ml tubes conical	11	34.7
HB-E110	40 x 2 ml tubes round	11	34.7
HB-E115	28 x 5/15 ml tubes conical	17	48
HB-E118	Heating Block, used for 45 x 5 ml blood colllection Tubes		
HB-E120	8 x 50 ml tubes conical	29.8	48
HB-E125	18 x 0.2 ml, 0.5 ml x 1.5/2 ml		
HB-E130	96 or 384 well plate		

Electrochemistry

The perfect combination

Instruments, aligned with the highest technological standards at an extremely competitive price.

A particular focus was put on easy handling during the daily routine.

pH
cond
multi

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OPR Measurement, Conductivity Cells, pH Buffer Solutions, pH Storage Solutions	Page 110

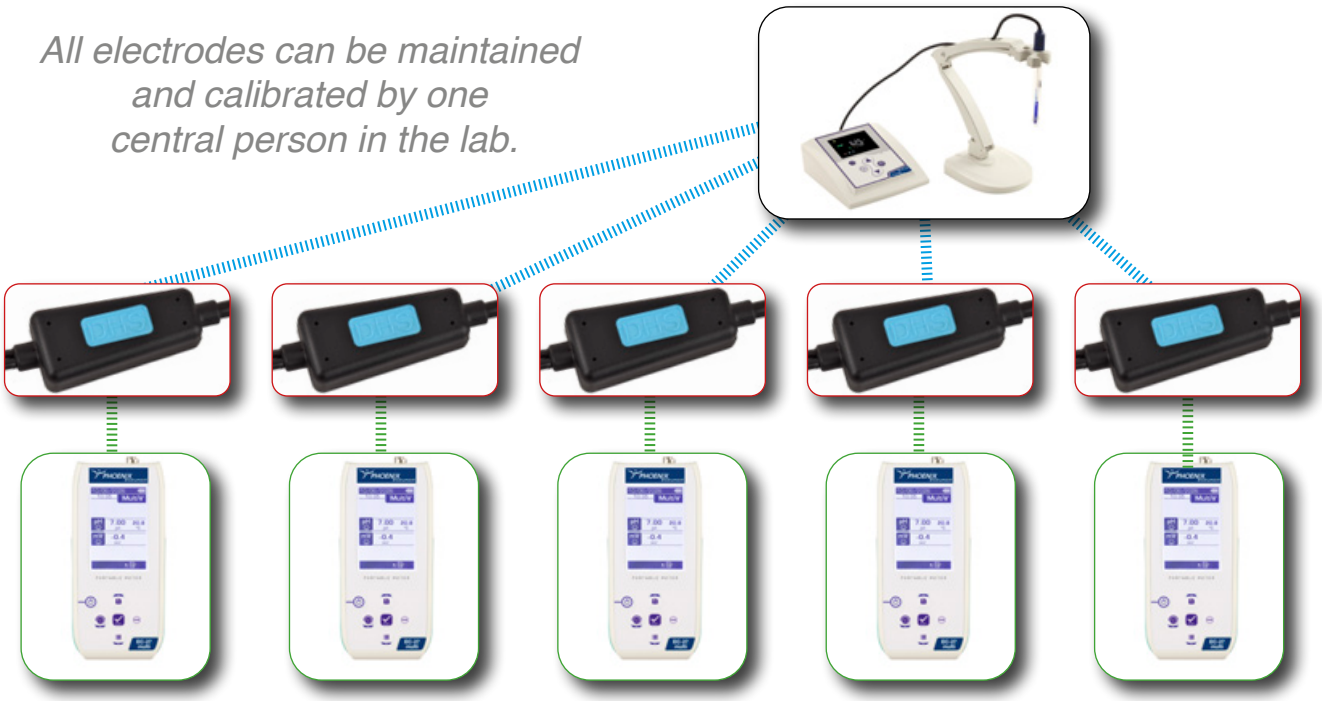
DHS - The Digital Revolution

DHS, **Digital High Sensor**, is our new pH-sensor technology. These electrodes have an internal chip and stores all relevant calibration data, date of last calibration, slope, model and production batch.

If you connect a DHS-electrode with an DHS instrument, all data will be transferred from the chip into the instrument and the user can start immediately with its measurements without any additional calibrations. The new DHS-electrodes do not need an internal battery and can be connected by a normal BNC-connector.

All instruments equipped with the new **DHS Technology** can also be equipped with normal analog pH-electrodes. PH measurement was never easier.

All electrodes can be maintained and calibrated by one central person in the lab.



In use, every electrode will be allocated to one pH-meter

DHS - Digital High Sensor pH Electrode

New portable pH-meter EC-22-pH and EC-27-pH

Phoenix Instrument is proud to present a new generation of portable measuring instruments that combines the highest precision with modern design. Developed for use in both laboratory settings and demanding outdoor conditions, these instruments feature a waterproof construction and a compact, elegant design.

The development of this innovative series has been significantly shaped by a combination of many years of technical experience, valuable input from the field, and the ever-growing demands of users. The result is a well-designed measuring instrument that brings functionality and user-friendliness to the highest level.

A large, high-resolution, backlit TFT display allows for a display of multiple parameters simultaneously. Intuitive operation ensures an efficient workflow, while selected models are equipped with advanced features such as an integrated data logger and a state-of-the-art USB-C interface for easy data transfer to a PC.

2 Years
Instrument Warranty

EC-22 pH

- High-resolution, backlit TFT display
- Rugged, waterproof design (IP-65)
- DHS function, automatic detection of DHS and analog sensors
- Automatic calibration with up to 3 points, 2 user-defined points
- Automatic ORP 1-point calibration
- Simultaneous display of measured values
- Manual or automatic temperature compensation
- Memory for up to 100 data points
- Supplied in a sturdy carrying case with all accessories

EC-27 pH

- High-resolution, backlit TFT display
- Rugged, waterproof design (IP-65)
- DHS function, automatic detection of DHS and analog sensors
- Automatic calibration with up to 5 points, 2 user-defined points
- Automatic ORP 1-point calibration
- Simultaneous display of up to 4 measured values
- Manual or automatic temperature compensation
- Manual and automatic Data logger, up to 1000 Data
- Individual labeling of measurement data (sensor ID / user ID / sample ID)
- 5 selectable operating languages
- Supplied in a sturdy case with all accessories

EC-27 pH

New portable pH-meter EC-22-pH and EC-27-pH

Available Sets

EC-22-pH-0	Meter without electrode, incl. Temperature sensor, cable S7/BNC, pH-buffer, carrying case and accessories
EC-22-pH-1	Meter with pH-electrode 201T, pH-buffer, carrying case and accessories
EC-22-pH-5	Meter with pH-electrode 201T DHS, pH-buffer, carrying case and accessories
EC-27-pH-0	Meter w/o pH-electrode, incl Temperature sensor, cable S7/BNC, pH-buffer, carrying case, accessories, Software PC-Link, USB-cable
EC-27-pH-1	Meter with pH-electrode 201T and pH-buffer, carrying case, accessories, Software PC-Link, USB-cable
EC-27-pH-5	Meter with pH-electrode 201T DHS and pH-buffer, carrying case, accessories, Software PC-Link, USB-cable

Set with case

Accessories

1001612	Power Supply for EC-27pH
1000962	Softcase with adjustable shoulder strap
1001312	pH-mV Simulator incl. BNC-Cable

Technical data	EC-22 pH	EC-27 pH
Measuring Range (pH)	0.00 - 14.00	-2.00 - 16.00
Resolution (pH)	0.1 / 0.01	0.1 / 0.01 / 0.001 / 0.005
Calibration Points	1-3	1-5
Buffer recognition	USA, NIST and user defined	USA, NIST and user defined
Measuring Range (mV)	±1,000	-1,000 … +1,900
Resolution (mV)	1	1 / 0.1
Measuring Range (T)	0 … 100.0 °C	-10 … 110.0 °C
Resolution (T)	0.1°C	0.1°C
GLP	No	Yes
Calibration alarm	No	Yes
Memory	100 Data	1,000 Data
Interface	No	USB-C
IP-Class	IP 65	IP 65
Dimension (mm)	75 x 160 x 45	75 x 160 x 45
Weight (gr)	320	320
Weight	2 years	2 years

Basic Benchtop pH-Meter EC-31 pH and EC-36 pH

In the development of the new EC-31/EC-36 series, a particular focus was put on easy handling during the daily routine.
The high-resolution color display guides the user intuitively through the measurement and calibration process.

EC-31 pH

- high-resolution color display, adjustable brightness
- DHS function, automatic recognition of DHS and analogue sensors
- Display of pH/mV and temperature values
- automatic pH calibration up to 3 points
- automatic ORP 1-point calibration
- selectable stability parameter (low-medium-high)
- automatic and manual temperature compensation
- Protection class IP 54

3 Years
Instrument Warranty

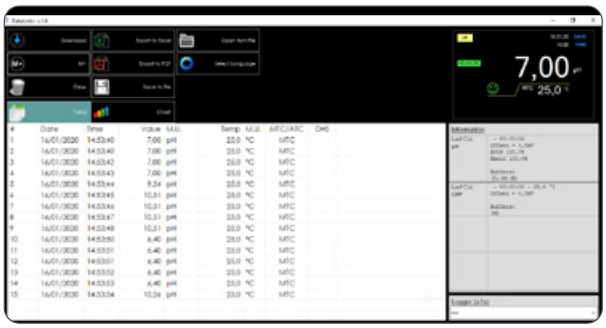
High Resolution Color Display EC-31 pH

Technical Data	EC-31 pH	EC-36 pH
Meas. range	0.00 …14.00 pH	-2.00 … 16.00 pH
Resolution	0.1 / 0.01 pH	
Calibration points	1 ... 3	
Buffer resolution	USA, NIST and user defined	
Measuring range	±1,000 mV	-1,000 … 1,900 mV
Resolution	1 mV	0.1 / 1 mV
Temp. measuring range	0.0 … 100 °C	-10 … 110 °C
Resolution / accuracy	0.1 / ± 0.5 °C	
GLP	no	yes
Calibration alarm	no	yes
Memory	no	1,000 data
Interface	no	Micro USB
IP-class	IP 54	
Dimension	170 x 145 x 60 mm	
Weight	530 g	

Basic Benchtop pH-Meter EC-31 pH and EC-36 pH

Additional for EC-36 pH

- GLP functions
- Data logger (automatic or manual) 1,000 data records
- Connection to PC via micro-USB
- free DATA LINK +



DATA LINK +

The software allows remote control of the instrument in measure mode.

It shows all information relating to the instrument and calibrations, data export at the end of the analysis (also in Exel and PDF format) and the display of measurements in the table and in graphic.

3 Years
Instrument Warranty

Available Sets

EC-31-pH-0	Kit without pH electrode, with temperature sensor, cable S7/BNC, pH buffer solution, electrode holder
EC-31-pH-1	Kit includes pH electrode 201T, pH buffer solution, electrode holder
EC-31-pH-5	Kit includes pH electrode 201T-DHS, pH buffer solution, electrode holder
EC-36-pH-0	Kit without pH electrode, with temperature sensor, cable S7/BNC, pH buffer Solution, electrode holder
EC-36-pH-1	Kit includes pH electrode 201T, pH buffer solution, electrode holder
EC-36-pH-5	Kit includes pH electrode 201T-DHS, pH buffer solution, electrode holder

Professional Benchtop pH Meter EC-45 pH

The large colored graphic display offers perfect readout and shows all information that you need about measurement, buffers used for calibration, electrode's life, GLP information and instrument's memory. Anyone can use this meter easily with its clear menu structure up to 5 languages.
The new **DHS-technology** allows the use of digital as well as analog electrodes. Up to 5-point pH calibration with automatic recognition for USA/NIST/DIN and User buffers. Icon support all calibration editing function with advanced electrode diagnostics.
Only a few keys allow the user to control all functions in an intuitive and easy way. The EC-45 pH can be delivered with a stirrer.

EC-45 pH

- Display pH/mV and Temperature parameters simultaneously
- Resolution: 0.001 pH
- Automatic Calibration up to 5 points with automatic buffer recognition
- DHS-function, automatic recognition of DHS- and analog electrodes
- GLP and IQ-OQ manual available
- Large, colored graphic display
- Memory with re-call of last calibration date and time and information of electrode's life
- CAL DUE: set of calibration frequency for high quality of measurements
- Non-volatile memory holds up to 1,000 data points with date/ time in automatic (Data logger) or manual
- External keypad
- 2 x USB ports and 1 x RS-232 interface to transfer data at PC or printer and for external keyboard
- Instrument can be equipped with a magnetic stirrer
- IP54 rated housing handles splashes

3 Years
Instrument Warranty

EC-45 pH with electrode arm and optional stirrer

Professional Benchtop Meter EC-45 pH

Available Sets

EC-45-pH-0	Kit without pH electrode, with cable S7/BNC, temperature probe NT55, DHS-function, pH buffer solution pH 7 and pH 4, electrodes arm, keypad, power supply and accessories
EC-45-pH-1	Complete kit includes pH electrode STANDARD, DHS-function, temperature probe NT55, S7/BNC 1 m cable, pH buffer solution pH 7 and pH 4, electrodes arm, power supply, keypad, accessories
EC-45-pH-2	Kit without pH electrode, with cable S7/BNC, temperature probe NT55, DHS-function, pH buffer solution pH 7 and pH 4, electrodes arm, power supply, keypad with magnetic stirrer
EC-45-pH-3	Complete kit includes pH electrode STANDARD, temperature probe NT55, S7/BNC 1 m cable, DHS-function, pH buffer solution pH 7 and pH 4, electrodes arm, keypad, power supply, with magnetic stirrer
EC-45-pH-5	Complete kit includes pH electrode STANDARD-DHS, DHS-function, temperature probe NT55, S7/BNC 1 m cable, pH buffer solution, electrodes arm, power supply, keypad and accessories
EC-45-pH-6	Complete kit includes pH electrode STANDARD-DHS, DHS-function, temperature probe NT55, S7/BNC 1 m cable, pH buffer solution, electrodes arm, power supply, keypad, accessories, with stirrer
1001502	Printer for EC-35 and EC-45

Optional Stirrer

Technical Data	EC-45 pH
Meas. range	-2 … 20 pH
Resolution	0.1 / 0.01. / 0.001 pH
Buffer solution	1…5 / USA, NIST, DIN, user defined
Calibration points	1 … 5
Buffer recocnition	yes
Measuring range	± 2,000 mV
Resolution	0.1 / 1 mV
Measuring range	-30.0 ….130.0 °C
Resolution	± 0.1 °C
DHS Electrode	yes
Buffer resolution	1.000 data
Timer	yes
GLP	yes
Interfaces	2 x USB, RS-232
Display	Colored graphic display
IP-class	IP 54
Power supply	Adapter 12 V DC
Weight	1,050 g, without stirrer
Dimension	165 x 195 x 68 mm

New portable Conductivity meter EC-22-pH and EC-27-pH

Phoenix Instrument is proud to present a new generation of portable measuring instruments that combines the highest precision with modern design. Developed for use in both laboratory settings and demanding outdoor conditions, these instruments feature a waterproof construction and a compact, elegant design.

The development of this innovative series has been significantly shaped by a combination of many years of technical experience, valuable input from the field, and the ever-growing demands of users. The result is a well-designed measuring instrument that brings functionality and user-friendliness to the highest level.

A large, high-resolution, backlit TFT display allows for a display of multiple parameters simultaneously. Intuitive operation ensures an efficient workflow, while selected models are equipped with advanced features such as an integrated data logger and a state-of-the-art USB-C interface for easy data transfer to a PC.

EC-22 cond

- High-resolution, backlit TFT display
- Rugged, waterproof design (IP-65)
- 2-Ring Cond-cell, (c = 0,1 – 1 – 10)
- 3 selectable cell constant
- Automatic calibration up to 4 points, user-defined points
- Manual or automatic Temperature compensation
- Selectable reference temperature (15...30 °C)
- Measuring of Conductivity, TDS, Salinity and Temperature
- Simultaneous display of measuring results
- Memory for up to 100 data points
- Supplied in a sturdy carrying case with all accessories

EC-27 cond

- High-resolution, backlit TFT display
- Rugged, waterproof design (IP-65)
- 4-Pol Cond-Cell, (c = 0,55) Measuring Range: 0,1 µS...1000,0 mS
- Automatic calibration up to 4 points, user-defined points
- Manual or automatic Temperature compensation
- Selectable reference temperature (15...30 °C)
- Measuring of Conductivity, TDS, Salinity and Temperature
- Simultaneous display of up to 4 Measuring results
- Manual and automatic Data logger, up to 1000 Data
- Custom labeling of measurement data (sensor ID / user ID / sample ID)
- 5 selectable user languages
- Supplied in a sturdy carrying case with all accessories

EC-27 cond

New portable Conductivity meter EC-22-pH and EC-27-pH

Available Sets

EC-22-cond 0 Meter without Cell, incl. Calibration standards, carrying case and accessories

EC-22-cond 1 Meter with Cond. cell 2301T, Calibration standards, carrying case and accessories

EC-22-cond 2 Meter with Cond. Cell EPT 1 (for heavier soiling), Cal. standards, carrying case and accessories

EC-27-cond-0 Meter without Cell, incl. Calibration standards, USB cable, Software PC-link, carrying case and accessories

EC-27-cond-1 Meter with Cond. cell EPT 4 (0.1 µS...1000.0 mS), Cal. standards, USB cable, Software PC-link, carrying case and accessories

Set with case

Accessories

1001612 Power Supply for EC-27pH

1000962 Softcase with adjustable shoulder strap

Technical data	EC-22 cond	EC-27 cond
Measuring Range (Cond)	0.01 µS/cm ... 200 mS/cm	0,01 µS/cm ... 1,000 mS/cm
Resolution (Cond)	0.01 / 0.1 / 1 µs/cm	0.01 / 0.1 / 1 µs/cm
Measuring Range (Salinity)	0.1 ppm ... 100 ppt	0.1 ppm ... 100 ppt
Measuring Range (TDS)	0.1 mg/l ... 200 g/l	0.1 mg/l ... 500 g/l
Conversion factor	Linear (0,4 … 1)	Linear (0.4 … 1) / NaCl / KCl / 442
Measuring Range (Temp)	0 ... +100 °C	-10 ... +110 °C
Readability / Accuracy	0.1 / ± 0,5 °C	0.1 / ± 0.5 °C
Calibration points	1…4	1…5
Cal. Standards	84, 1413 µS / 12.88, 111.8 mS and user defined	5.00 µS / 84, 1413 µS / 12.88, 111.8 mS and user defined
GLP	No	Yes
Calibration alarm	No	Yes
Memory	100 Data	1000 Data
Interface	No	USB-C
IP-Class	IP 65	IP 65
Dimension	75 x 160 x 45 mm	75 x 160 x 45 mm
Warranty	2 years	2 years

Basic Benchtop Conductivity EC-31 cond and EC-36 cond

In the development of the new EC-31/EC-36 series, particular focus was put on easy handling during the daily routine. The high-resolution color display guides the user intuitively through the measurement and calibration process.

EC-31 cond

- high-resolution colour display, adjustable brightness
- Display of Conductivity/TDS and temperature values
- automatic conductivity calibration up to 5 points
- selectable stability parameter (low-medium-high)
- automatic and manual temperature compensation
- Protection class IP 54

3 Years
Instrument Warranty

EC-31 cond

Additional for EC-36 cond

- GLP functions
- Data logger (automatic or manual) 1,000 data records
- Connection to PC via micro-USB
- free DATA LINK +

Available Sets

EC-31-cond-0	Kit without cell, with standard calibration solutions, cell holder and accessories
EC-31-cond-1	Complete kit includes cond. Cell 2301T with ATC, cable length 1m and BNC plug, standard calibration solutions, cell holder and accessories
EC-36-cond-0	Kit without cell, with standard calibration solutions, power supply, software PC-Link, USB cable, cell holder and accessories
EC-36-cond-1	Complete kit includes cond. Cell 2301T wit ATC, cable length 1m and BNC plug, Standard calibration solutions, power supply, software PC-Link, USB cable, cell holder and accessories

Modell	EC-31 cond	EC-36 cond
Meas. range conductivity	0.00 … 200 mS	
Accuracy	0.1/1 µS; 0.01/0.,1 mS	
Calibration points	1 … 5	
Selectable cell constant	0.1 – 1 – 10 cm^{-1}	
Temp. range	0.0 … 100 °C	-10 … 110 °C
Resolution / accuracy	0.1 / ± 0.5 °C	
TDS meas. range	0.1 mg/l … 200 g/l	
GLP	no	yes
Calibration alarm	no	yes
Memory	no	1,000 data
Interface	no	Micro USB
IP class	IP 54	
Dimension	170 x 145 x 60 mm	
Weight	530 g	

Professional Conductivity Benchtop Meter EC-45 cond

The large colored graphic display offers perfect readout and shows all information that you need about measurement, buffers used for calibration, cell condition, GLP information and instrument's memory. Anyone can use this meter easily with its clear menu structure up to 5 languages.

Up to 4 calibration points with buffer recognition. Icon support for all calibration functions and advanced electrode diagnostics. Easy to calibrate.

All functions can be controlled in an intuitive and easy way.

The instrument can be delivered with a stirrer.

3 Years
Instrument Warranty

EC-45 cond
with stand and optional stirrer

Avaliable Sets

EC-45 cond 0	Kit without conductivity cell, standard solution 1413 µS and 12,88 mS, cell holder and accessories
EC-45 cond 1	Kit includes conductivity cell Glass-Pt VPT80/1, standard solution 1413 µS and 12,88 mS, cell holder, power supply and accessories
EC-45 cond 2	Kit without, with standard solution 1413 µS and 12,88 mS, cell holder and accessories, **with magnetic stirrer**
EC-45 cond 3	Kit includes cell Glass-Pt VPT80/1, standard solution 1413 µS and 12,88 mS, cell holder and accessories, **with magnetic stirrer**

Professional Conductivity Benchtop Meter EC-45 cond

EC-45 cond

3 Years
Instrument Warranty

- Display COND/TDS, Salinity and Temperature simultaneously
- Resolution: automatic scale
- GLP-conform
- external keypad
- Selectable cell constant allows for use with 2 plate cell
- Automatic calibration 1 to 4 points between 4 conductivity standard values
- Manual-Calibration up to 1 points (User defined)
- Large colored graphic display with indication of Calibration Standards and measurement's stability
- Automatic and manual compensation of temperature with reference value 15 … 30 °C
- Memory with re-call of last calibration date and time and information of cell constant
- CAL DUE: set of calibration frequency for high quality of measurements
- Non-volatile memory holds up to 1,000 data points with date and time Data logger
- 2 x USB ports and 1 x RS-232 interface to transfer data, software PC-Link to download data
- Instrument can be delivered with a magnetic stirrer
- IP54 Protection

Magnetic Stirrer (optional)

Technical Data	EC-45 cond
Mesuaring range (cond)	0.00 - 20.00 - 200.0 - 2,000 µS
	2.00 - 20.00 - 200.0 - 1,000 mS
Resolution (cond)	Automatic full scale
Calibration Standards	84, 1413 µS, 12.88, 111.8 mS, user
Calibration points	1 … 4
Selectable cell constant	0.55 (4 ring) – 0.1 – 1 – 10
Cell type	4 rings - 2 rings
Reference temperature	15 … 30 °C
Temp. compensation	0.00 … 10.00 °C
Measuring range	-30.0 … 130.0 °C
Resolution	± 0.5 °C
TDS-measuring range	0 … 500 g/l
TDS-Faktor	0.40 … 1.00
Salinity	0.01 … 100 ppt
Resistivity	1 … 10 MΩ
Memory	1,000 data
Timer	yes
GLP	yes
Interfaces	2 x USB, RS-232
Display	Color graphic display
Ip protection	IP 54
Power supply	Adapter 12 V DC
Weight	1,050 g, without stirrer
Dimension	165 x 195 x 68 mm

New portable Multimeter EC-22-multi and EC-27-multi

Phoenix Instrument is proud to present a new generation of portable measuring instruments that combines the highest precision with modern design. Developed for use in both laboratory settings and demanding outdoor conditions, these instruments feature a waterproof construction and a compact, elegant design.

The development of this innovative series has been significantly shaped by a combination of many years of technical experience, valuable input from the field, and the ever-growing demands of users. The result is a well-designed measuring instrument that brings functionality and user-friendliness to the highest level.

A large, high-resolution, backlit TFT display allows for a display of multiple parameters simultaneously. Intuitive operation ensures an efficient workflow, while selected models are equipped with advanced features such as an integrated data logger and a state-of-the-art USB-C interface for easy data transfer to a PC.

2 Years Warranty

EC-22 multi

- High-resolution, backlit TFT display
- Rugged, waterproof design (IP-65)
- DHS function, automatic detection of DHS and analog sensors
- Automatic calibration with up to 3 points, 2 user-defined points
- 2-Ring Conductivity cell, (c = 0,1 – 1 – 10)
- 3 selectable cell constant
- Automatic calibration up to 4 ponits, 1 user-defined point
- Manual or automatic Temperature compensation
- Selectable Reference temperature (15...30 °C)
- Measurement of Conductivity, TDS, Salinity and Temperature
- Simultaneous display of measuring values
- Manual menory of up to 100 Data
- Delivery in a sturdy carrying case with all accessories

EC-27 multi

- High-resolution, backlit TFT display
- Rugged, waterproof design (IP-65)
- 2-Ring LF-Cell, (c = 0,1 – 1 – 10)
- Automatic Calibration up to 4 points, 1 user-defined point
- Manual or automatic Temperature compensation
- Selectable Referencetemperatura (15...30 °C)
- Measurement of Conductivity, TDS, Salinity and Temperature
- Simultaneous display of 4 measuring values
- Manual menory of up to 1000 Data
- Individual labeling of measurement data (sensor ID / user ID / sample ID)
- 5 selectable operating languages
- Supplied in a sturdy case with all accessories

EC-27 multi

Basic Benchtop Multi Meter EC-31 multi and EC-36 multi

In the development of the new EC-31/EC-36 series, a particular focus was put on easy handling during the daily routine. The high-resolution color display guides the user intuitively through the measurement and calibration process.

EC-31 multi

- high-resolution colour display, adjustable brightness
- Display of pH/mV, Conductivity/TDS and temperature values
- automatic Conductivity calibration up to 5 points
- automatic pH calibration up to 3 points
- automatic ORP 1-point calibration
- selectable stability parameter (low-medium-high)
- automatic and manual temperature compensation
- Protection class IP 54

Additional for EC-36 multi

- GLP functions
- Data logger (automatic or manual) 1,000 data records
- Connection to PC via micro-USB
- free DATA LINK +

3 Years
Instrument Warranty

Available Sets

EC-31-multi-0 Kit without pH-electrode, with conuctivity cell 2301T, with standard calibration solutions, Temperature sensor, cable S7/BNC, pH buffer solutions, electrode holder

EC-31-multi-1 Complete kit include pH electrode 201T and cond. Cell 2301T with ATC, both cable length 1m and BNC plug, standard calibration solutions, pH buffer solutions, electrode holder

EC-31-multi-5 Complete kit include pH electrode 201T-DHS and cond. Cell 2301T with ATC, both cable length 1m and BNC plug, standard calibration solutions, pH buffer solutions, electrode holder

EC-36-multi-0 Kit without pH-electrode, with conuctivity cell 2301T, with standard calibration solutions, Temperature sensor, cable S7/BNC, pH buffer solutions, electrode holder

EC-36-multi-1 Complete kit include pH electrode 201T and cond. Cell 2301T with ATC, both cable length 1m and BNC plug, standard calibration solutions, pH buffer solutions, electrode holder

EC-36-multi-5 Complete kit include pH electrode 201T-DHS and cond. Cell 2301T with ATC, both cable length 1m and BNC plug, standard calibration solutions, pH buffer solutions, electrode holde

Technical Data	EC-31 multi	EC-36 multi
Measuring range	0.00 … 14.00 pH	-2.00 … 16.00 pH
Accuracy	0.1 / 0.01 pH	
Calibration points	1 … 3	
Buffer resolution	USA, NIST and user defined	
Measuring range cond	0.00 … 200 mS	
Accuracy cond	0.1/1 µS; 0.01/0.1 mS	
Calibration points	1 … 5	
Selectable cell constant	0.1 – 1 – 10 cm^{-1}	
Temperature meas. range	0.0 … 100 °C	-10 … 110 °C
Resolution / accuracy	0.1 / ± 0.5 °C	
TDS meas. range	0.1 mg/l … 200 g/l	
GLP	no	yes
Calibration alarm	no	yes
Memory	no	1,000 data
Interface	no	Micro USB
IP-class	IP 54	
Dimension	170 x 145 x 60 mm	
Weight	530 g	

Professional Benchtop Multiparameter Meter EC-45 multi

The large colored graphic display shows all necessary information about measurement, calibration, standards, cell condition, GLP. Anyone can use this meter easily with its intuitive menu available in up to 5 languages.

The new DHS-technology allows the use of digital as well as analog electrodes. Up to 5-point pH-calibration and up to 4-point Conductivty calibration with automatic recognition of all standards. Icon support for all calibration functions and advanced electrode diagnostics.

All functions can be controlled in an intuitive and easy way. The instrument can be delivered with a stirrer.

3 Years
Instrument Warranty

EC-45 multi with Stirrer (optional)

Professional Benchtop Multiparameter EC-45 multi

EC-45 multi

- Display pH/mV,COND/TDS, Salinity and Temperature simultaneously
- Resolution: 0.1-0.001 pH; Auto range for Cold
- GLP-conform
- Selectable cell constant allows for use with 2 plate cell
- Large colored graphic display with indication of Calibration Buffers and measurement's stability
- Indication stability of the measurement with icon
- Memory with re-call of last calibration date and time and information of electrode's life
- CAL DUE: set of calibration frequency for high quality of measurements
- Stability Parameter (Low-Med-High) for high accuracy measurement
- Non-volatile memory holds up to 1,000 data points with date and time in automatic (Data logger) or manual
- 2 x USB ports to transfer data at PC or printer and for external keyboard
- Software PC-Link to download data (included)
- external keypad
- Instrument can be delivered with magnetic stirrer
- IP54 protection

3 Years
Instrument Warranty

Available Sets

EC-45-multi-2

Kit without pH electrode and cell, with cable S7/BNC, temp. probe NT55, pH buffer solution pH 7 and pH 4, conductivity solution 1413 µS and 12,88 mS, DHS-function, Keypad and accessories, **with magnetic stirrer**

EC-45-multi-3

Kit included pH electrode XS STANDARD S7, 1 mt cable S7/BNC, cell glass VPT 80/1 with ATC, DHS-function, pH buffer solution pH 7 and pH 4, standard conductivity solution 1413 µS and 12,88 mS, keypad and accessories, **with magnetic stirrer**

EC-45-multi-5

Kit included pH electrode XS STANDARD-DHS S7, 1 mt cable S7/BNC, cell glass VPT 80/1 with ATC, DHS-function, pH buffer solution pH 7 and pH 4, standard conductivity solution 1413 µS and 12,88 mS, keypad and accessories, **with magnetic stirrer**

Technical Data	EC-45 multi
Measuring range	-2 … 20 pH
Accuracy	0.1 / 0.01 / 0.001 pH
Buffer	1 … 5 /USA, NIST, DIN, User
Calibration points	1 … 5
Buffer recognition	yes
Meas. range	± 2,000 mV
Accuracy	0.1 / 1 mV
Meas. range	-20.0 … 120.0 °C
Accuracy	± 0.5 °C
DHS-Electrode	yes
Meas. range cond	0.00 - 20.00 - 200.0 - 2,000 µS
	2.00 - 20.00 - 200.0 - 1,000 mS
Accuracy cond	Automatic full scale
Buffer	84, 1413 µS, 12.88, 111.8 mS, User
Calibration points	1 … 4, user
Selectable cell constant	0.1 – 1 – 10 cm^{-1}
Reference temperature	15 … 30 °C
Temp. compensation	0.00 … 100.0 °C
TDS-Meas. range	0 … 500 g/l
TDS-Factor	0.40 … 1.00
Salinity	0.01 … 100 ppt
Resistivity	0 … 20 MΩ
Memory	1,000 data
Timer	yes
GLP	yes
Interface	2 x USB, RS-232
Display	Color graphic display
IP-class	IP 54
Power supply	Adapter 12 V DC
Dimension	165 x 195 x 68 mm
Weight	1,050 g, without stirrer

Tester Serie EC-15
with replaceable sensor

- automatic calibration function incl. stability icon
- 3-color backlit LCD-display (Measurement – Calibration – Alarm)
- pH-electrodes and conductivity cells also available with cable
- IP 67 waterproof
- easy replaceable sensor
- 2 x 1,5 V AAA Batteries, Display of battery level

EC-15pH pH / mV / °C

- Measuring range: -2 …16 pH, Resolution: 0.01 pH
- 1 … 3 points calibration

EC-15pH Food pH / mV / °C

- Measuring range: -2 … 16 pH, Resolution 0.01 pH
- 1 … 3 points calibration
- with replaceable spear pH electrode

EC-15-COND Cond / TDS / Salinity / °C

- Cond scale: 0 … 200 µS - 0 … 2,000 µS - 0 … 20 mS
- 1 … 3 points calibration

EC-15-Multi pH / mV / Cond /TDS / Salinity / °C

- Measuring range: -2 … 16 pH, Resolution 0.01 pH
- 1 … 3 points calibration
- COND scale: 0 … 200 µS - 0 … 2,000 µS - 0 … 20 mS
- 1 … 3 points calibration

Color parameter identification

pH/mV | Cond/TDS/SAL | pH/mV/Cond/TDS/SAL

Large Backlit Display

During measure | In Calibration | Alarm condition

Electrochemistry

Tester Serie EC-15
with replaceable sensor

Box EC-15 cond

Available Sets

EC-15-pH eco

Tester, 1 extra cap, batteries

EC-15-pH / pH Food

Tester, 1 extra cap, pH 7 and pH 4 buffer solution, storage solution, neck strap, paper towel, 2x 1.5V AAA batteries, box

EC-15-Cond eco

Tester, 1 extra cap, batteries

EC-15-Cond

Tester, 1 extra cap, 1413µS and 12,88mS cond. standard solution, neck strap, paper towel, 2x 1.5V AAA batteries, box

EC-15-Multi

Tester, 1 extra cap, pH 7 and pH 4 buffer solution, storage solution, 1413µS cond. standard solution, neck strap,paper towel, 2x 1.5V AAA batteries, box

Technical Data	EC-15pH / Food	EC-15 Cond	EC-15-Multi
pH Meas. range	-2 … 16 pH	-	-2 … 16 pH
pH resolution	0.01 pH	-	0.01 ph
Calibration points	1 … 3	-	1 … 3
Electrode condition alarm	yes	yes	yes
Stability meas. indication	yes	yes	yes
mV meas. range	± 1,000 mV	-	± 1,000 mV
mV resolution	0.1 / 1 mV	-	0.1 / 1 mV
Cond meas. range	-	0 - 200 µs; 0 - 2,000 µS; 0 - 20 mS	
Cond accuracy	-	Automatic scale	
Calibration points	-	1 … 3	
TDS meas. range	-	0.1 ppm … 10 ppt	
TDS relative accuracy	-	± 1% full scale	
Temperature range	0 … 50 °C		
Resolution	0.1 °C		
Dimension (Ø x L)	35 x 175 mm (pH) 35 x 210 mm (Food)	35 x 175 mm	35 x 175 mm
Weight	130 g		

Tester Serie EC-10

EC-10 pH

EC-10 cond

Available Sets

EC-10-pH

Tester, 1 extra cap, pH 7 and pH 4 buffer solution, storage solution, neck strap, paper towel, 2 x 1.5 V AAA batteries, carrying case.

EC-10-Cond

Tester, 1 extra cap, 1x 55 ml 1413 µS and 12.88 mS cond. standard solution, neck strap, paper towel, 4 x 1.5 V AAA batteries, carrying case.

EC-10-pH-Eco

Tester, 1 extra cap, batteries

EC-10-Cond-Eco

Tester, 1 extra cap, batteries

EC-10

- Large LCD display
- IP 67 waterproof protection
- Buffers used for calibration indication
- Measurement stability indicator
- Automatic temperature compensation
- 4 x 1.5 V AAA batteries for long working time

compatible with rechargeable batteries

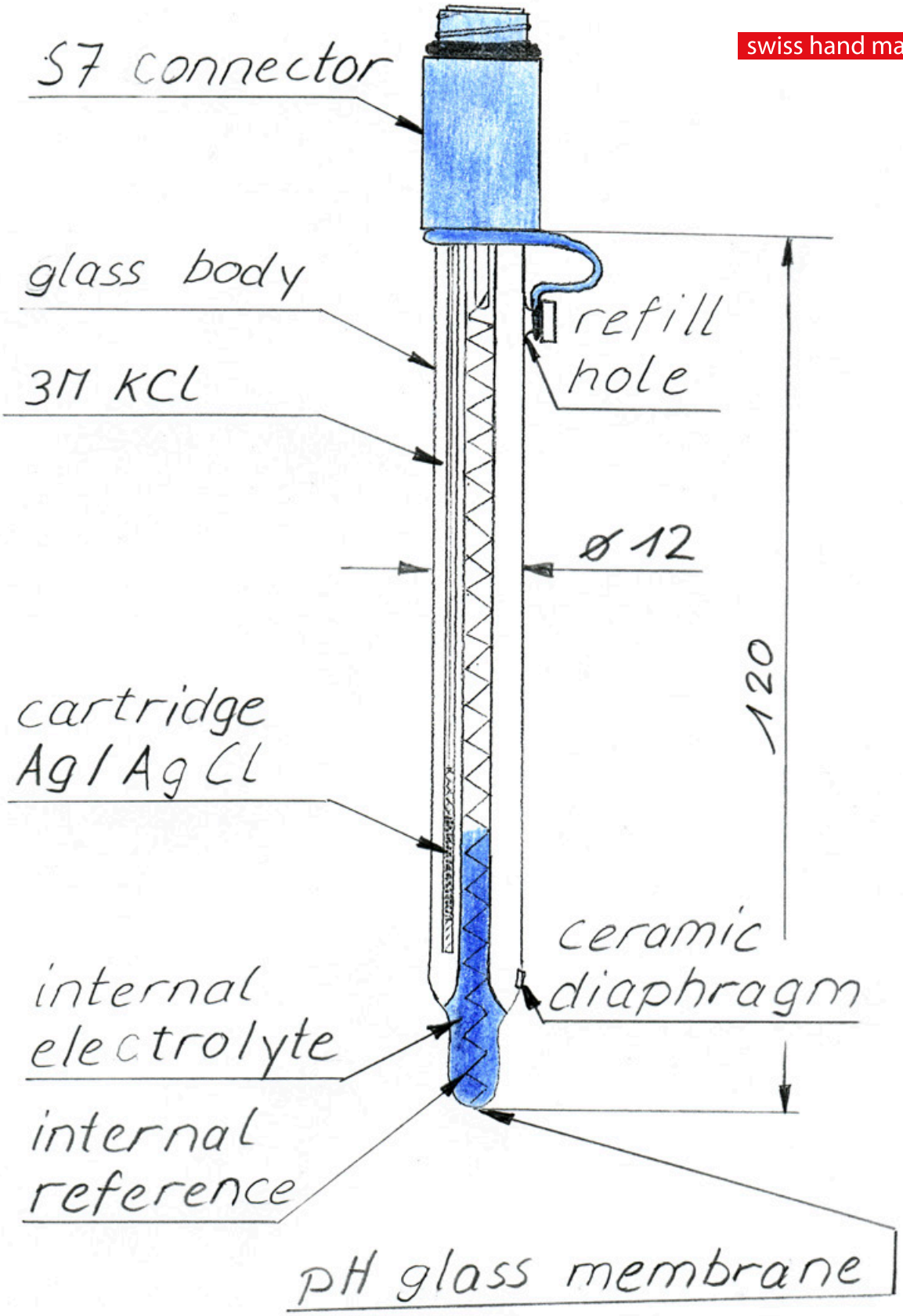
Display pH

Display Cond

Technical Data	EC-10pH	EC-10Cond
pH Meas. range	0 … 14	
pH resolution	0.1	
Calibration points	1 … 2	
Buffer recognition	3 USA buffer	
Electrode condition alarm	yes	
Cond resolution		automatic scale
Calibration points cond		1 … 2
Cal. standard recocnition		1.413 µS, 12.88 mS
TDS meas. range		0.01 … 199,9 ppm
Auto off	after 8 minutes	
Warranty	6 months	
Dimension ø x L	35 x 175 mm	
Weight	120 g	

Electrodes

swiss hand made



Field of application

	Gel	Polymer	Polymer Tip	Standard	Polymer Plast/201T	Standard HA	Flat	Standard HF	Food	2 Pore Slim	2 Pore	2 Pore F	Food Slim	Semimicro	Micro	Micro P	Flow
aqueous Emulsionen		•	•	•					•								•
aqueous Suspensionen		•	•	•					•								•
Bread- Pasta			•						•	•	•	•	•				
Brine	•	•	•	•	•				•								•
Butter									•	•	•	•	•				
Cheese										•	•	•	•				
Cosmetics		•	•	•		•			•								•
Cream		•	•						•								•
Detergents	•	•	•	•	•	•			•								•
Fruit juice		•	•	•					•								•
Fruits and Vegetables										•	•	•	•				
Galvanic exhaust		•	•			•											•
Jam		•	•						•		•						•
Leather							•										
Mayonnaise									•		•						•
Meat									•	•	•	•	•				
Milk									•	•	•	•	•				
Paint (waterbased)		•	•	•					•								•
Paint				•					•								•
Sample containing proteins		•	•						•		•		•			•	
Sample high alcalinity						•											
Sample high temperature*				•		•			•								
Sample small volume							•							•	•	•	
Sample with hydrofluoric Acid								•									
Semi-aqueous suspensions									•								•
Soap liquid		•	•	•					•								•
Soil			•							•	•	•	•				•
Solutions low-ionic strength																	•
Surfaces							•										
Titration				•					•								•
Titration, non aqueous																	•
TRIS-buffer				•													•
Viscous samples		•	•						•								•
Waste and Sewage		•	•		•	•											•
Water, distilled									•								•
Water, drinking	•	•	•	•	•				•								•
Wine		•	•	•					•								•
Yoghurt		•	•						•	•	•	•	•				•

* short time 100 °C

Electrodes for general laboratory application

GEL

Shaft Material	Glass
Connector	S7 Head
Electrolyte	Gel
Diaphragm	Ceramic
Diameter	12 mm
Length	120 mm
pH-measuring range	0…14
Temperature range	-10…60 °C

Model no. 1000203 GEL

POLYMER

Shaft Material	Glass
Connector	S7 Head
Electrolyte	Polymer
Diaphragm	Open pore
Diameter	12 mm
Length	120 mm
pH-measuring range	0…14
Temperature range	-10…80 °C

Model no. 1000223 POLYMER

POLYMER TIP

Shaft Material	Glass
Connector	S7 Head
Electrolyte	Polymer
Diaphragm	2 x Open pore
Diameter	12 mm
Length	120 mm
pH-measuring range	0…14
Temperature range	-10…80 °C

Model no. 1000443 POLYMER TIP

STANDARD

Shaft Material	Glass
Connector	S7 Head
Electrolyte	3M KCl
Diaphragm	Ceramic
Diameter	12 mm
Length	120 mm
pH-measuring range	0…14
Temperature range	-10…100 °C

Model no. 1000363 STANDARD

More standard versions

STANDARD HA

like Standard,
minimal Alkali-error

Model no. 1000423 STANDARD HA

STANDARD HF

like Standard,
suitable for samples with HF

Model no. 1000433 STANDARD HF

More versions with fix cable or temperature probe on demand

Electrodes for general laboratory application

POLYMER PLAST

Shaft Material	Epoxy
Connector	S7 Head
Electrolyte	Polymer
Diaphragm	1 x Ceramic and 1 x open pore
Diameter	12 mm
Length	120 mm
pH-measuring range	0…14
Temperature range	0…60 °C

Model no. 1000493 POLYMER PLAST

POLYMER PLAST BNC

Connector	Fix cable BNC

Model no. 1000503 POLYMER PLAST BNC

POLYMER PLAST DIN

Connector	Fix cable DIN

Model no. 1000513 POLYMER PLAST DIN

201T

Shaft Material	Epoxy
Connector	Fix cable
Electrolyte	Gel
Diaphragm	1 x Ceramic and 1 x open pore
Diameter	12 mm
Length	120 mm
pH-measuring range	0…14
Temperature range	0…60 °C
Temperature probe	yes, 30 kΩ with Cinch plug

Model no. 1002002 201T

FLAT

Shaft Material	Glass
Connector	S7 Head
Electrolyte	Polymer
Diaphragm	Teflon with 3 x open pore
Diameter	12 mm
Length	120 mm
pH-measuring range	0…14
Temperature range	0…60 °C

Model no. 1000413 FLAT

FLOW

Shaft Material	Glass
Connector	S7 Head
Electrolyte	3M KCl
Diaphragm	Teflon Sleeve
Diameter	12 mm
Length	120 mm
pH-measuring range	0…14
Temperature range	-10…80 °C

Model no. 1000373 FLOW

More versions with fix cable or temperature probe on demand

Electrodes for general laboratory application

SEMI MICRO

Shaft Material	Glass
Connector	S7 Head
Electrolyte	3M KCl
Diaphragm	Ceramic
Diameter	12 mm / 6 mm
Length	100 mm
pH-measuring range	0…14
Temperature range	0…100 °C

Model no. 1000383 SEMI MICRO

MICRO

Shaft Material	Glass
Connector	S7 Head
Electrolyte	3M KCl
Diaphragm	Ceramic
Diameter	12 mm / 3 mm
Length	60 mm
pH-measuring range	0…14
Temperature range	0…100 °C

Model no. 1000213 MICRO

MICRO P
like MICRO,
Electrolyte Glycerin KCL

Model no. 1000253 MICRO P

Food Measurements Electrodes

FOOD

Shaft Material	Glass
Connector	S7 Head
Electrolyte	Glycerin KCL
Diaphragm	3 x Ceramic
Diameter	12 mm
Length	120 mm
pH-measuring range	0…14
Temperature range	-10…100 °C

Model no. 1000393 FOOD

2 PORE

Shaft Material	Glass
Connector	S7 Head
Electrolyte	Polymer
Diaphragm	2 x Open pore
Diameter	12 mm / 6 mm
Length	35 mm
pH-measuring range	0…14
Temperature range	0…+60 °C

Model no. 1000333 2 PORE

More versions 2 PORE

2 PORE SLIM
like 2 PORE,
Diameter 4.5 mm

Model no. 1000283 2 PORE SLIM

More versions 2 PORE

2 PORE F
like 2 PORE, Shaft Material POM / Glass

Model no. 1000293 — 2 PORE F

2 PORE T - Fix cable
like 2 PORE, T-probe NTC 30 kΩ

Model no. 1000323 — 2 PORE F - Fix cable

2 PORE STEEL T - Fix cable
like 2 PORE, T-probe NTC 30 kΩ
Shaft Glass/stainless steel, Length 50 mm

Model no. 1000313 — 2 PORE STEEL T - Fix cable

2 PORE K

Shaft Material	Glass / Steel
Connector	S7 Head
Electrolyte	Polymer
Diaphragm	2 x Open pore
Diameter	12 mm / 4.5 mm
Length	35 mm
pH-measuring range	0…14
Temperature range	0…+60 °C

Model no. 1000303 - complete with knife
1000343 - without knife
1000353 - Replaceable knife

2 PORE K

FOOD SLIM

Shaft Material	Glass
Connector	S7 Head
Electrolyte	Glycerin KCL
Diaphragm	Ceramic
Diameter	12 mm / 6 mm
Length	25 mm
pH-measuring range	0…14
Temperature range	0…+100 °C

Model no. 1000243 — FOOD SLIM

Redox Electrodes

STANDARD ORP

Shaft Material	Glass
Connector	S7 Head
Electrolyte	3M KCl
Diaphragm	3 x Ceramic
Diameter	12 mm
Length	120 mm
Range	+/- 2,000 mV
Temperature range	-10…100 °C

Model no. 2000233 — STANDARD ORP

PLAST ORP

Shaft Material	Epoxy
Connector	S7 Head or fix cable
Electrolyte	Gel
Diaphragm	Ceramic
Diameter	12 mm
Length	120 mm
Range	+/- 1,000 mV
Temperature range	0…60 °C

Model no. 2000663 - with S7 Head
2000673 - with fix cable BNC

PLAST ORP

Conductivity cells

VP 8 – VPT 1

Shaft / Plate	Glass / Platin
Cell constant	1 cm^{-1}
Diameter	12 mm
Length	120 mm
Range	10 µS…10 mS
Temperature range	0…80 °C

Model no. 3004062 - VP 8, w/o T-probe
3003352 - VPT 1, with T-probe

VP 8 - VPT 80/1

VPT 01

Shaft / Plate	PVC / Steel
Cell constant	0,1 cm^{-1}
Diameter	12 mm
Length	120 mm
Range	0.1 µS…1 mS
Temperature range	0…60 °C

Model no. 3004012 - VPT 01, with T-probe

VPT 01

VPT 10

Shaft / Plate	Glass / Platinum
Cell constant	10 cm^{-1}
Diameter	12 mm
Length	120 mm
Range	100 µS…200 mS
Temperature range	0…80 °C

Model no. 3004072 - VPT 10, with T-probe

VPT 10

EPT1

Schaft	Epoxy
Elektrodes	2 Graphit-Elektrodes
Cell constant	1 cm^{-1}
Diameter	12 mm
Length	120 mm
Range	0,01 µS…1000 mS
Temperature range	0…60 °C

EPT1

Model no. 3003382 – EPT1 with T-probe

EPT4

Shaft Material	PVC
Electrodes	4 Graphit-Electrodes
Cell constant	0.5 cm^{-1}
Diameter	12 mm
Length	120 mm
Range	1 µS…200 mS
Temperature range	0…60 °C

Model no. 3003362 - EPT4 with T-probe,
for EC-45 and EC-27 cond

EPT4

2301T

Shaft / Plate	Epoxy / Platinum
Cell constant	1 cm^{-1}
Diameter	12 mm
Length	120 mm
Range	10 µS…100 mS
Temperature range	0…60 °C

Model no. 3004002 - 2301T, with T-probe

2301T

1000203	Gel	pH-electrode, gel-filled with ceramic diaphragma
1000223	Polymer	pH-electrode,polymer-filled with open pore diaphragma
1000443	Polymer Tip	pH-electrode,polymer-filled with double open pore diaphragma
1000363	Standard	pH standard electrode with ceramic diaphragma
1000423	Standard HA	like standard, minimal Alkali error
1000433	Standard HF	like standard, for samples with HF
1000263	STANDARD BNC	like standard, with fix cable BNC
1000273	STANDARD DIN	like standard, with fix cable DIN
1000473	STANDARD T - BNC	like standard, with fix cable BNC and Temperature sensor
1000463	STANDARD T DIN	like standard, with fix cable DIN and Temperature sensor
1000493	Polymer Plast	Polymer electrode with 1 ceramic and 1 x open pore diaphragma, epoxy body
1000503	Polymer Plast BNC	like Polymer, with fix cable BNC
1000513	Polymer Plast DIN	like Polymer, with fix cable DIN
1002002	201T	pH-electrode with epoxy body, temperature sensor and fix cable BNC
1002042	201 T DIN	pH-electrode with Temperature sensor and fix DIN-cable
1000413	Flat	pH-electrode for surface measurements, 3-hole diaphragma with Teflon
1000373	Flow	pH-electrode for viscous samples and low ion media, Teflon sleeve diaphragma
1000383	Semi-Micro	pH-electrode for test tube measurements
1000213	Micro	pH-electrode for small volume samples
1000253	Micro P	pH-electrode for small volume samples with protein, Electrolyte Glycerin
1005223	GEL Plast BNC	pH-electrode with epoxy body, fix BNC-cable and double diaphragma
1000393	FOOD	pH-electrode with Glycerin KCl electrolyte and 3 ceramic diaphragm
1000333	2 PORE	pH-electrode with 2 open pore diaphragma
1000393	FOOD	pH-electrode with Glycerin KCl electrolyte and 3 ceramic diaphragm, S7- Head
1000753	FOOD T-BNC	pH-electrode with Glycerin KCl electrolyte, 3 ceramic diaphragm, T-sensor and fix BNC-cable
1000333	2 PORE	pH-electrode with 2 open pore diaphragma, S7-Head
1000283	2 PORE SLIM	like 2 PORE, with small surface Ø 4,5mm, S7-Head
1000293	2 PORE F	like 2 PORE, shaft POM/Glass, S7-Head
1000703	2 PORE F T-BNC	pH-electrode with double hole diaphragma, Ø 6 mm, T-sensor and fix BNC-cable
1000323	2 Pore T	like 2 PORE, with temperature sensor 30 KΩ, fix cable BNC
1000313	2 Pore Steel T	like 2 PORE, shaft Steel/Glass, with temperature sensor and fix cable BNC
1000303	2 PORE K complete	like 2 PORE T, with knife, S7-Head
1000343	2 PORE K	like 2 PORE K without knife
1000353	Knife	Replacement knife for 2 PORE K
1000243	Food Slim	pH-electrode with Glycerin KCl electrolyte and 2 ceramic diaphragm, S7-Head

DHS pH - Standard Electrodes

1100103	201T DHS	pH-electrode with epoxy body, temperature sensor and fix cable BNC, DHS-function
1100123	STANDARD T - BNC DHS	pH standard electrode with ceramic diaphragma, fix BNC-cable and Temperature sensor, DHS-function
1100113	2 Pore T DHS	pH-electrode with 2 open pore diaphragma, Temperature sensor and fix BNC-cable, DHS-function
1100133	Flow T BNC DHS	pH electrode for low-ion media and viscous samples, with fixed BNC cable and T-probe, DHS function
1100143	2 PORE F T-BNC DHS	pH electrode with double hole diaphragm, Ø 6 mm, shaft POM/glass and T-probe, DHS function

Electrodes for ORP Measurement

2000233	Standard ORP	electrode with platinum ring for ORP/Redox
2000663	Plast ORP	electrode with platinum pin for ORP/Redox
2000673	Plast ORP/BNC	electrode with platinum pin for ORP/Redox, fix cable BNC

Conductivity Cells

3004062	VP8	conductivity cell, cell constant c=1, fix cable BNC
3003352	VPT 80/1	conductivity cell, cell constant c=1, fix cable BNC, temperature sensor
3004012	VPT51/01	conductivity cell, cell constant c=0,1, fix cable BNC, temperature sensor for ultrapure water
3004072	VPT 80/10	conductivity cell, cell constant c=10, fix cable BNC, temperature sensor for sea water
3004002	2301T	conductivity cell, cell constant c=1, fix cable BNC, temperature sensor
3003382	EPT 1	Cond. Cell, cell constant c=1, meas. range 10 µS…100 mS, fix cable BNC, T-sensor
3004002	EPT 4	conductivity cell, cell constant c=0,55, fix Multi-Pin cablel, T-Sensor 4-pole conductivity cell, 0.1 µS…1 S, *Only for EC-45-cond*

Conductivity Standards

800613	Conductivity Standard 84 µS/cm ± 1% / 25 °C, 500 ml bottle
800633	Conductivity Standard 1.413 µS/cm ± 1% / 25 °C, 500 ml bottle
800643	Conductivity Standard 12.880 µS/cm ± 1% / 25 °C, 500 ml bottle
850513	Conductivity Standard 5 µS/cm ± 0.1 / 25 °C, 300 ml bottle with N.I.S.T. certificate
850313	Conductivity Standard 5 µS/cm ± 0.1 / 25 °C, 300 ml bottle with DFM certificate
850303	Conductivity Standard 1.3 µS/cm ± 0.1 / 25 °C, 300 ml bottle with DFM certificate

Conductivity Standards

More pH-Electrodes on request

pH Buffer Solutions

800033	Buffer pH4, ± 0.01 / 25 °C, 250 ml bottle, red
800133	Buffer pH4, ± 0.01 / 25 °C, 500 ml bottle, red
800233	Buffer pH4, ± 0.01 / 25 °C, 5 Liter red
800043	Buffer pH7, ± 0.01 / 25 °C, 250 ml bottle, green
800143	Buffer pH7, ± 0.01 / 25 °C, 500 ml bottle, green
800243	Buffer pH7, ± 0.01 / 25 °C, 5 Liter green
800073	Buffer pH9.21, ± 0.02 / 25 °C, 250 ml bottle, blue
800173	Buffer pH9.21, ± 0.02 / 25 °C, 500 ml bottle, blue
800273	Buffer pH9.21, ± 0.02 / 25 °C, 5 Liter blue
800063	Buffer pH10 ± 0.02 / 25 °C, 250 ml bottle, clear
800163	Buffer pH10 ± 0.02 / 25 °C, 500 ml bottle, clear
800263	Buffer pH10, ± 0.02 / 25 °C, 5 Liter clear

pH-Buffer Solutions

pH Storage Solution

1008013	3M KCl-Solution, 500 ml

Redox Buffer

800303	250 ml Redox/ORP 200 mV ± 5 mV / 25 °C
800313	250 ml Redox/ORP 475 mV ± 5 mV / 25 °C
800323	500 ml Redox/ORP 475 mV ± 5 mV / 25 °C

DAKKS certified buffer solutions are available as well

Electrodes

Printer 1001502

More Accessories

1001733	Cable S7 / BNC 1 Meter
1001743	Cable S7 / DIN 1 Meter
1002012	Temperature sensor NT55
1000112	Elektrode holder
1001502	Printer for EC-36 and EC-45

Digital Portable Thermometer TM-21 and TM-26

Phoenix Instrument is proud to announce the introduction of a complete and interesting range of digital portable thermometers and probes. The models TM-21, TM-26 and TM-28 are designed to offer the best performance combined with a simple and intuitive user interface. Depending on the model, either PT100, NTC30K, or thermocouples can be connected.

TM-21-NTC

2 years warranty

TM-21-NTC • TM-21-PT • TM-21-K/T

- Portable thermometer with backlit color display
- Recording of minimum and maximum values, measurement stability display
- Suitable for PT100, NTC30K, or type K and T thermocouples
- Single-point calibration with display of the correction made
- Hold function, min/max, and automatic shutdown after 20 minutes
- Simple and intuitive operation
- IP 56
- Carrying case and batteries included

Available Sets

TM-21-PT 0	Kit for PT 100 sensors, including case, without sensor
TM-21-NTC 0	Kit for NTC sensors, including case, without sensor
TM-21-NTC 1	Kit for NTC sensors, including TM-122 (penetration) and case
TM-21-NTC 2	Kit for NTC sensors, including TM-142 (liquids and air) and case
TM-21-KT 0	Kit for thermocouple K/T sensors, including case, without sensor
TM-26-PT 0	Kit for PT 100 sensors, including case and USB power supply, without sensor

Accessory

TM-300	Magnetic holder for TM-21, TM-26 and TM-28

Digital Portable Thermometer TM-21 and TM-26

TM-26-PT

2 years warranty

Additional features on the TM-26

- Two separate measurement channels are available for PT100
- USB interface
- Manual and automatic storage of up to 1000 data sets (temperature and time)
- GLP-compliant measurement possible

Offset Settings

Technical data	TM-21-NTC	TM-21-PT	TM-21-KT	TM-26-PT
Sensor	NTC-30K	PT 100	Thermoelement Type K and T	PT 100
Measuring range	-50.0 … +150.0 °C	-200.0 … +999.0 °C	K: -200 ... +1.350 °C T: -250 ... +400 °C	-200.0 … +999.0 °C
Resolution	0.1 °C	0,1 °C (-99,9 ... +199,9 °C)		0,01 °C
Accuracy	0.2 °C	±0.2 °C (-99.9 … +199.9 °C) ±2 °C in the remaining meas. Range	±0.1% from meas. value ±0.4 °C (> –150 °C) ±0.25% from meas. value ±1 °C (< –150 °C)	±0.03 °C (-99.99 … +99.9 °C) ±0.1 °C (-200.0 … -100.0 °C)
Measurement channels	1			2
Interface	no			USB
Datenlogger	no			1000 data
Display	High resolution backlit LCD-Colordisplay			
Operating conditions	T: 0 … +60 °C UR: < 95 %			
Dimensions / Weight	85 x 184 x 45 mm / 0.4 Kg			
IP class	IP 56			
Power supply	Battery			Battery / USB-Power supply

Digital Portable Thermometer TM-28-PT

The new TM-28-PT offers the possibility to measure the temperature with four PT100 sensors simultaneously and to store it using the large internal data logger. The current 4 measured values are displayed in parallel on the 4“ graphic display. All data can be conveniently transferred to a PC via the USB interface.

TM-28-PT

- GLP-compliant, portable thermometer 4 x PT100 inputs, resolution 0.01 °C
- High-resolution 4-inch color display for all lighting conditions
- Intuitive user interface in ITA - ENG - ESP - FR - DE
- Data logger for up to 190,000 data records with date and time
- Different memory modes
- DataLink+ software available for free download
- Optical and visual alarm function
- ID entry for each channel
- 1-point calibration for each channel
- 4-digit password to protect data and calibrations

DataLink+

4 x PT100-Input / USB

3 years warranty

Available Sets

TM-28-PT 0	Kit for PT 100 sensors, including case and USB power supply, without sensor
TM-28-PT 1	Kit for PT 100 sensors, including 4 x TM-252, case, and USB power supply

Accessory

TM-300	Magnetic holder for TM-21, TM-26 and TM-28

Technical data	TM-28-PT
Sensor input	4 x PT-100
Measuring range	-200.0…+999.9 °C
Resolution	0.01 °C
Accuracy	±0.03 °C (-99.99 … +99.9 °C) ±0.1 °C (+100.0 … +999.9 °C) ±0.1 °C (-200.0 … -100.0 °C)
Measurement channels	4
Interface	USB
Data logger	190,000 data
Display	4" Color graphic display
Operating conditions	T: 0 … +60 °C UR: < 95 %
Dimensions / Weight	85 x 184 x 45 mm / 0.4 Kg
IP class	IP 56
Power supply	Battery / USB-power sopply

PT-100 Sensor for TM-21-PT, -26-PT, -28-PT

	Meas. range	Lenght	Diameter	Accuracy class	Application	Handle / Cable
TM-202	- 50 ... +400	200 mm	3 mm	A	Liquids and Air	yes / 1.5 m
TM-212	- 50 ... +400	200 mm	5 mm	A	Contact	yes / 1.5 m
TM-222	- 50 ... +400	150 mm	4 mm	A	Penetration	yes / 1.5 m
TM-232	- 50 ... +250	200 mm	4 mm	A	Air	yes / 1.5 m
TM-242	- 50 ... +400	200 mm	3 mm	1/5 DIN	1/5 DIN	yes / 1.5 m
TM-252	-100... +300	100 mm	4 mm	A	Fridge u. Oven	no / 3 m
TM-262	- 50 ... +400	500 mm	6 mm	A	Liquids and Air	yes / 1.5 m
TM-272	- 50 ... +400	1,000 mm	6 mm	A	Liquids and Air	yes / 1.5 m
TM-292	-100... +300	100 mm	4 mm	1/5 DIN	1/5 DIN	no / 3 m

NTC 30K Sensor for TM-21-NTC

	Meas. range	Lenght	Diameter	Accuracy class	Application	Handle / Cable
TM-142	- 50 ... +150	200 mm	3 mm		Liquids and Air	Handle
TM-122	- 50 ... +150	150 mm	4 mm		Einstich	Handle

Thermocouple K Sensor TM-21-KT

	Meas. range	Lenght	Diameter	Accuracy class	Application	Handle / Cable
TM-752	- 60 ... +600	200 mm	2 mm	1	Liquids and Air	yes / 1.5 m
TM-762	- 60 ... +800	200 mm	3 mm	1	Liquids	yes / 1.5 m
TM-772	- 60 ... +800	500 mm	3 mm	1	Liquids and Air	yes / 1.5 m
TM-782	- 60 ... +1100	1000 mm	6 mm	1	High Temperature	yes / 1.5 m
TM-792	- 60 ... +1100	500 mm	6 mm	1	High Temperature	yes / 1.5 m
TM-802	- 60 ... +600	200 mm	5 mm	1	Contact	yes / 1.5 m
TM-812	- 60 ... +400	2000 mm	2 mm	1	Installation	no / 2 m
TM-822	- 60 ... +1100	1,200 mm	6 mm	1	High Temperature	yes / 1.5 m
TM-832	- 50 ... +600	150 mm	4 mm	1	Penetration	yes / 1.5 m

Thermocouple T Sensor for TM-21 KT

	Meas. range	Lenght	Diameter	Accuracy class	Application	Handle / Cable
TM-902	- 50 ... +350	200 mm	3 mm	1	Liquids and Air	yes / 1.5 m
TM-912	- 50 ... +350	150 mm	4 mm	1	Penetration	yes / 1.5 m
TM-922	- 50 ... +350	200 mm	5 mm	1	Contact	yes / 1.5 m
TM-932	- 50 ... +250	200 mm	4 mm	1	Air	yes / 1.5 m
TM-942	- 50 ... +350	150 mm	2 mm	1	Penetration	yes / 1.5 m
TM-952	- 50 ... +300	100 mm	2.5 mm	1	Liquids and Air	no / 2 m

Digital Ultrasonic Baths – DU-Series

The new Digital ultrasonic cleaner baths are made of excellent quality stainless steel and are equipped with heating up to 60 °C, timer, power control, Pulse, Degas, Multifrequency and overtemperature alarm.

The DU series is equipped with a LCD display and a controller which simultaneously indicate timer, set temperature, actual temperature, ultrasonic power level and operating frequency.
All models are provided with a stainless-steel mesh basket, stainless steel lid and 1x 60 ml concentrate universal cleaner solution.

The most common applications are

- Degassing of wine or beer samples for analysis of alcohol contents, color and pH value
- Cleaning of technical glassware
- Degassing of canned drinks for analysis of stannous contents
- Extraction of soil samples for determination of hydrocarbons
- Simultaneous disinfection and cleaning
- Electronic parts and components, lenses and crystals

2 years warranty

Digital Ultrasonic Baths – DU-Series

Sweep Technology

This new technology guarantees a more uniform and homogeneous ultrasonic intensity in the washing liquid. It ensures a more effective washing process and better results than the usual ultrasonic cleaning.

Pulse

A special function to intensify the cleaning action and generate ultrasonic power enormously increased compared to normal power.

Degas

It is used to remove dissolved gases in wash liquids and to degas samples.

Multifrequency

Two ultrasound frequencies (28 & 40 kHz) are selectable to adapt to the demands the process and ensure appreciable cleaning of the object for the various types of dirt and contamination.

Technical Data	DU-32S	DU-45S	DU-65S	DU-100S	DU-220S	DU-450S
Capacity	3.2 L	4.5 L	6.5 L	10 L	22 L	45 L
Max. Temperature	60 °C					
Heating Power	100 W	200 W	200 W	500 W	500 W	1,000 W
Timer	1 … 99 min					
Power Level	10-100 % / Step 10 %					
Ultrasonic Frequency	28 & 40 kHz					
Ulltrasonic Power	120 W	180 W	180 W	240 W	480 W	720 W
Voltage • Fequency	220 - 240 V • 50 - 60 Hz					
Tank Dimension	240 x 135 x 100 mm	300 x 150 x 100 mm	240 x 150 x 150 mm	300 x 240 x 150 mm	500 x 300 x 150 mm	500 x 300 x 300 mm
Extern. Dimension	260 x 160 x 235 mm	325 x 175 x 225 mm	325 x 175 x 305 mm	325 x 265 x 310 mm	530 x 330 x 340 mm	530 x 325 x 500 mm
Weight	3.8 kg	4.4 kg	5.4 kg	8.2 kg	13.2 kg	17 kg

Rotatory Evaporator

Rotatory Evaporator RE-100D

RE-100D

- Huge, easy-to-read LCD display, indicates temperature, speed and time
- Speed range from 20 to 280 rpm
- Large 5 l water/oil heating bath with heating temperature range of RT to 180 °C
- Heating bath with precise temperature control and adjustable safety circuit
- Patented condenser cooling surface 1,500 cm² with excellent cooling effect
- Motorized lift with quick-action, automatic release evaporating flask to top position in case of power failure
- Adjustable final position recognition to protect operator and sample against breakage
- Evaporating flask with an ejector, convenient to remove
- Available with timer function to precise control processing
- Interval operation left/right

Improved Cooler with 1,500 cm² cooling surface with excellent cooling effect

Motorized Lift with Safety Function in case of power failure

Huge Display showing all parameters

Huge 5 L Water/Oil-Bath up to 180 °C

Vacuum Pumps

RE-P 100	Vacuum membran pump, ultimate vacuum 8 mbar
RE-P 110	Vacuum-dosing block with manometer
RE-P 200	Pressure controlled vacuum-system,ultimate vacuum 2 mbar

RE-P 100

RE-P 110

RE-P 200

Technical Data	RE-100D
Voltage • Frequency	100-240 V • 50/60 Hz
Power	1,400 W
Motor	brushless DC
Speed	20 - 280 rpm
Speed display	LCD
Temperature	RT to 180 °C
Accuracy Heating	± 1 °C
Heating power	1,300 W
Temperature display	LCD
Lift	Motor
Stroke	150 mm
Timer control	Yes
Time display	LCD
Operation time	1-999 min
Dimension	600 x 450 x 820 mm
Weight	19 kg
Ambient temperature	5 - 40 °C
Relative humidiy	80 %
Protection class	IP20

Accessories

RE-S 100	Vapor tube
RE-S 110	Seal
RE-S 200	Vertical glass set
RE-S 250	Vertical glass set, coated
RE-S 300	Evaporation flask 500 ml, NS29/32
RE-S 310	Evaporation flask 1,000 ml, NS29/32
RE-S 320	Evaporation flask 2,000 ml, NS29/32
RE-S 350	Evaporation flask 500 ml, NS29/32, coated
RE-S 360	Evaporation flask 1,000 ml, NS29/32, coated
RE-S 370	Evaporation flask 2,000 ml, NS29/32, coated
RE-S 400	Receiving flask 500 ml, KS35/20
RE-S 410	Receiving flask 1,000 ml, KS35/20
RE-S 420	Receiving flask 2,000 ml, KS35/20
RE-S 450	Receiving flask 500 ml, KS35/20, coated
RE-S 460	Receiving flask 1,000 ml, KS35/20, coated
RE-S 470	Receiving flask 2,000 ml, KS35/20, coated
RE-S 600	Foam brake
RE-S 650	Distilling spider with 5 flasks (50 ml)

More flasks, distilling spiders and further glass parts are available on request

Balances

Analytical and toploading Balances

Brilliant stability, and fast weighing results are guaranteed by the innovative construction of weighing cells in relation with the latest digital process technology.

Semi-Micro / Analytical Balancess	AP-Series	Page 121
Analytical Balances	ASN/ABN-Series	Page 122
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Toploading Balances	BTA-Series	Page 124
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AP - Series

The AP-series is the first line of semi-micro balances, equipped with the revolutionary UNIBLOC-weighing system. It guarantees brilliant stability, response and reliability characteristics.

The innovative and compact construction of the weighing cell in relation with the digital process technology enables fastest weighing results and highest stability.

AP-224

AP-Series

- automatic adjustment to environmental conditions
- huge, user-friendly weighing chamber
- RS-232 interface
- easy handling of all procedures
- direct data transfer into Windows application by Windows direct function
- various application programs (e. g. formulation, counting, %, density determination)
- weighing in different units
- weighing below the balance
- GLP/GMP-conform protocol
- user-defined printing intervals
- protection cover as standard
- backlit display (only at 0.1 mg)
- aluminum die-cast housing

5 Years Warranty

Three calibration procedures

- fully automatic calibration after temperature deviation
- fully automatic calibration at user-defined time intervals
- calibration per push CAL-button with built-in calibration weight

Model	Accuracy	Capacity	Pan Size	Meas. Time
AP-225	0.01 mg / 0.1 mg	82 g / 220 g	80 mm	3/15 sec
AP-125	0.01 mg / 0.1 mg	42 g / 120 g	80 mm	3/12 sec
AP-324	0.1 mg	320 g	80 mm	3 sec
AP-224	0.1 mg	220 g	80 mm	3 sec
AP-124	0.1 mg	120 g	80 mm	3 sec

ASN / ABN - Series

The ASN / ABN-Series is the all-round analytical balance for the laboratory. It guarantees brilliant stability, response and reliability characteristics. The innovative and compact construction of the weighing cell in relation with the digital process technology enables fastest weighing results and highest stability.

ASN-224

ASN / ABN-Series

- huge, user-friendly weighing chamber
- easy handling of all procedures
- RS-232 interface
- direct data transfer into Windows application by Windows direct function
- various application programs (e. g. formulation, counting, %)
- GLP/GMP-conform protocol
- user-defined printing intervals
- aluminum die-cast housing
- protection cover as standard

3 Years Warranty

Model	Accuracy	Capacity	Pan Size	Calibration	Meas. Time
ASN-324	0.1 mg	320 g	90 mm	internal	2 - 3 sec
ASN-224	0.1 mg	220 g	90 mm	internal	3 sec
ASN-124	0.1 mg	120 g	90 mm	internal	3 sec
ABN-224	0.1 mg	220 g	90 mm	extern	3 sec
ABN-124	0.1 mg	120 g	90 mm	extern	3 sec

BTG-224

The new neue analytical balance BTG-224 is ideal for all lab purpose. It combines easy handling, modern design and precise results.

BTG-224

BTG-224

- internal calibration
- reliable weighing system
- GLP-conform protocol (when connected to PC or printer)
- different user programs
- RS-232 Interface
- protection cover

3 Years Warranty

Technical Data	BTG-224
Capacity	220 g
Accuracy	0.1 mg
Reproducibility	0.1 mg
Linearity	0.2 mg
Meas. time	3 sec
Rechargeable Batteries	yes
Pan size	90 mm
Dimension	yes

BTA-Series

The BTA-Series is equipped with the revolutionary UNIBLOC-weighing system. It guarantees brilliant stability, response and reliability characteristics. The innovative and compact construction of the weighing cell in relation with the digital process technology enables fastest weighing results and highest stability.

BTA-Series

5 Years Warranty

- automatic adjustment to environmental conditions
- easy handling of all procedures
- RS-232 interface
- weighing in different units
- weighing below the balance
- direct data transfer into Windows application by Windows direct function
- various application programs (e. g. formulation, counting, animal weighing...)
- GLP/GMP-conform protocol
- user-defined printing intervals
- aluminum die-cast housing
- protection cover as standard
- backlit display

BTA-6202

Three calibration procedures

- fully automatic calibration after temperature deviation
- fully automatic calibration at user-defined time intervals
- calibration per push CAL-button with built-in calibration weight

Model	Accuracy	Capacity	Pan Size	Meas. Time
BTA-1023	0.001 g	1,020 g	108 x 105 mm	3 sec
BTA-623	0.001 g	620 g	108 x 105 mm	3 sec
BTA-423	0.001 g	420 g	108 x 105 mm	3 sec
BTA-6202	0.01 g	6,200 g	170 x 180 mm	3 sec
BTA-4202	0.01 g	4,200 g	170 x 180 mm	3 sec
BTA-2202	0.01 g	2,200 g	170 x 180 mm	3 sec
BTA-822	0.01 g	820 g	170 x 180 mm	3 sec
BTA-8201	0.1 g	8,200 g	170 x 180 mm	3 sec
BTA-4201	0.1 g	4,200 g	170 x 180 mm	3 sec

BTB-Series

The BTB-Series is equipped with the revolutionary UNIBLOC-weighing system which guarantees brilliant stability, response and reliability characteristics. The innovative and compact construction of the weighing cell in relation with the digital process technology enables fastest weighing results and highest stability. Calibration per push on the CAL-button with an external calibration weight.

BTB-Series

- automatic adjustment to environmental conditions
- easy handling of all procedures
- RS-232 interface
- weighing in different units
- weighing below the balance
- direct data transfer into Windows application by Windows direct function
- various application programs (e. g. formulation, counting, %, animal weighing ...)
- user-defined printing intervals
- aluminum die-case housing
- backlit display
- protection cover as standard

5 Years Warranty

BTB-6202

External Calibration
3 seconds measuring time

Model	Accuracy	Capacity	Pan Size
BTB-623	0.001 g	620 g	108 x 105 mm
BTB-423	0.001 g	420 g	108 x 105 mm
BTB-6202	0.01 g	6,200 g	170 x 180 mm
BTB-4202	0.01 g	4,200 g	170 x 180 mm
BTB-2202	0.01 g	2,200 g	170 x 180 mm

BTC-Series

The brandnew BTC-Series sets new standards with the revolutionary weighing system UNIBLOC and the state-of-the-art design.

5 Years Warranty

BTC-423V

BTC-Series

- built-in calibration weight
- separate stability indication
- RS-232 interface
- huge weighing chamber with glass wind protection as standard
- fast and convenient handling with the new menu operating key
- direct data transfer into Windows application by Windows direct function
- various application programs (e. g. formulation, counting, %)
- new backlit display for more comfortable readings

Internal Calibration
2 seconds measuring time

Model	Accuracy	Capacity	Pan Size
BTC-423	0.001 g	420 g	110 mm
BTC-323	0.001 g	320 g	110 mm
BTC-223	0.001 g	220 g	110 mm

BTD-Series

The BTD-Series combines state-of the art design, easy handling, extensive equipment and brilliant weighing results delivered by using the revolutionary UNIBLOC-weighing system, to a unique standard balance.

BTD - Series

- calibration per push on the CAL-button with an external calibration weight
- separate stability indication
- RS 232 interface
- huge weighing chamber with glass wind protection as standard (mg-balances)
- fast and convenient handling with the new menu operating key
- direct data transfer into Windows application by Windows direct function
- various application programs (e. g. formulation, counting, %)
- new backlit display for more comfortable readings

5 Years Warranty

BTD-3202

External Calibration
2 seconds measuring time

Model	Accuracy	Capacity	Pan Size
BTD-423	0.001 g	420 g	110 mm
BTD-323	0.001 g	320 g	110 mm
BTD-223	0.001 g	220 g	110 mm
BTD-4202	0.01 g	4,200 g	167 x 181 mm
BTD-3202	0.01 g	3,200 g	167 x 181 mm
BTD-2202	0.01 g	2,200 g	167 x 181 mm

BTE-Series

State-of-art-design, smart handling, extensive equipment, top prices.

BTE-Series

- calibration per push on the CAL-button with an external calibration weight
- separate stability indication
- fast and convenient handling with the new menu operating key
- direct data transfer into Windows application by Windows direct function
- RS 232 interface
- various application programs (e. g. formulation, counting, %)
- new backlit display for more comfortable readings

BTE-622

External Calibration
2 seconds measuring time

Model	Accuracy	Capacity	Pan Size
BTE-622	0.01 g	620 g	110 mm
BTE-6201	0.1 g	6,200 g	160 mm
BTE-4201	0.1 g	4,200 g	160 mm

BTF-Series

The brandnew BTF-series offers an excellent economical alternative in the range of toploading balances with an accuracy of 0.001 g to 0.01 g.

BTF-Series

- internal calibration weight (BTF-1003i, BTF6202i, BTF-4202i)
- huge, backlit display
- glass ring protection as standard at mg-balances
- convenient and easy operation
- various application programs
- RS-232-interface

3 Years Warranty

BTF-1003

3 seconds measuring time

Model	Accuracy	Capacity	Pan Size	Calibration
BTF-1003	0.001 g	1,000 g	110 mm	extern
BTF-1003i	0.001 g	1,000 g	110 mm	inten
BTF-6202	0.01 g	6,200 g	160 mm	extern
BTF-6202i	0.01 g	6,200 g	160 mm	inten
BTF-4202	0.01 g	4,200 g	160 mm	extern
BTF-4202i	0.01 g	4,200 g	160 mm	inten

BTG-Series

The brandnew BTG-series consists of multi-functional balances with a number of application programs.They are easy to handle and well-equipped. The internal rechargeable battery ensures a maximum of portability.

BTG-Series

- large, bright display
- intuitive and easy operation, large weighing pan
- Model BTG-303 with protection housing
- Calibration weight included
- various application programs
- RS-232 interface

3 Years Warranty

BTG-2002

BTG-303

External Calibration

Model	Accuracy	Capacity	Pan Size	Meas. Time
BTG-303	0.001 g	300 g	118 mm	2-3 sec
BTG-2002	0.01 g	2,000 g	188 x 148 mm	2 sec
BTG-6001	0.1 g	6,000 g	188 x 148 mm	2 sec

Entry-Level Model CB-2002 N and CB-6001 N

New entry-level balance for fast and reliable results at an affordable price.

CB-Serie

- backlit LCD - display
- rechargeable battery included
- various programs
- external calibration
- stainless steel pan

2 Years Warranty

CB-2002 N

Technical Data	CB-2002 N	CB-6001 N
Capacity	2,000 g	6,000 g
Accuracy	0.01 g	0.1 g
Reproductibility	0.02 g	0.2 g
Linearity	+/- 0.03 g	+/- 0.2 g
Meas. time	3 sec	1.5 sec
Rechargeable batteries	yes	yes
Pan size	160 x 120 mm	192 x 143 mm

Moisture Analyzer BM-60

BM-60

BM-60

- the large, backlit graphic display for easily read out even under poor lighting conditions
- the huge sample pan allows placing even larger samples on the instrument
- infrared quartz heater provides effective and homogen drying without interference
- auto-zero function ensures high accuracy measurements
- graphic display of the drying curves
- 5 different drying modes can be combined with 2 stop-functions

Technical Data	BM-60
Capacity	60 g
Accuracy	0.001 g / 0.01 %
Reproducibility	0.002 g / 0.05 %
Pan size	95 mm
Meas. units	Gram, % Moisture, % Solids
Stabilisation time	2-3 sec
Internal memory	10 Programs, 100 Test results
Calibration	automatic external
Heating source	400 W-Halogen heater, 50 - 160 °C
Drying programs	Standard, Drying in steps, gentle and fast huge
Display	large backlit LCD display

Moisture Analyzer BM-65

The newly developed moisture analyzer BM-65 is characterized by numerous features, helping the user to make working and testing with the instrument easy and convenient.

BM-65

- large, backlit display for easy readouts
- various parameters can be displayed simultaneously
- automatic test function
- powerful 400 W halogen heater
- internal memory
- automatic test run after the lid is closed
- pan lifter makes placing and changing of probes easier
- bi-lingual menue
- RS232 interface

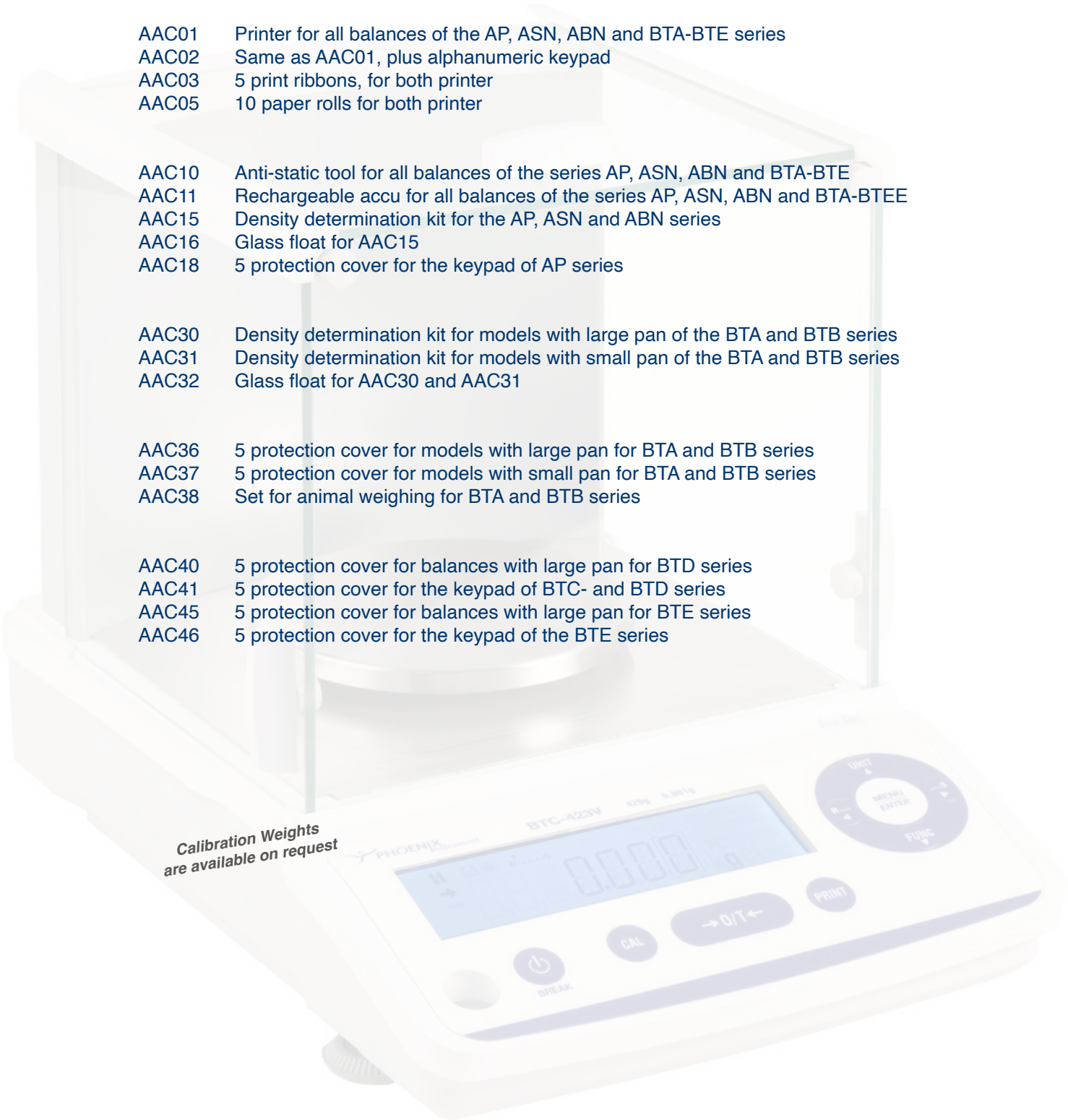
BM-65

3 Years Warranty

Technical Data	BM-65
Capacity	65 g
Accuracy	0.001 g / 0.01 %
Reproducibility	0.002 g / 0.05 %
Pan size	90 mm
Meas. units	Gram, % moisture, % solids, % moisture on dry bases (ATO %S)
Stabilisation time	4 sec
Internal memory	Up to 99 test results or 49 programable user setting
Calibration	external
Heating source	400 W-Halogen heater, 50 - 160 °C
Drying programs	standard one step up to 3 temp. stepping ramps
Display	large backlit LCD display

Accessories Weighing Technology

AAC01	Printer for all balances of the AP, ASN, ABN and BTA-BTE series
AAC02	Same as AAC01, plus alphanumeric keypad
AAC03	5 print ribbons, for both printer
AAC05	10 paper rolls for both printer
AAC10	Anti-static tool for all balances of the series AP, ASN, ABN and BTA-BTE
AAC11	Rechargeable accu for all balances of the series AP, ASN, ABN and BTA-BTEE
AAC15	Density determination kit for the AP, ASN and ABN series
AAC16	Glass float for AAC15
AAC18	5 protection cover for the keypad of AP series
AAC30	Density determination kit for models with large pan of the BTA and BTB series
AAC31	Density determination kit for models with small pan of the BTA and BTB series
AAC32	Glass float for AAC30 and AAC31
AAC36	5 protection cover for models with large pan for BTA and BTB series
AAC37	5 protection cover for models with small pan for BTA and BTB series
AAC38	Set for animal weighing for BTA and BTB series
AAC40	5 protection cover for balances with large pan for BTD series
AAC41	5 protection cover for the keypad of BTC- and BTD series
AAC45	5 protection cover for balances with large pan for BTE series
AAC46	5 protection cover for the keypad of the BTE series



Calibration Weights are available on request

Accessories Weighing Technology

AAC50	Carrying case for CA-Series
AAC51	Rechargeable accu for CA-series
AAC60	Sample pans aluminium (500 pieces) for BM-120
AAC63	Paper rolls (10 rolls) for AAC62
AAC70	Sample pans aluminium (250 per box) for BM-65
AAC71	Temperature calibration kit for BM-65
AAC73	Anti-theft lock for BM-65
AAC80	Weighing table made of granite, size: 900 x 600 x 750 mm

Table AAC80

Lab Jacks LJ-Series

Brand new line of Lab Jacks. Designed with a height-adjustable platform, for supporting and adjusting the height of general lab devices such as hot plates, water baths, etc.; as well as glassware; mainly made of aluminum alloy materials.
The lab jacks are provided with good corrosion resistance and resistance to many chemicals.

Features at a glance

- Easy adjustment with an adjusting wheel
- High stability and torsional rigidity
- stable stand
- High load carrying capacity and resilience
- Fully autoclavable at 121°C for sterile application

2 Years Warranty

LJ-01

LJ-02

LJ-03

Aluminum alloy

Adjusting wheel

Technical Data	LJ-01	LJ-02	LJ-03
Base Size	80 x 76 mm	140 x 120 mm	150 x 121 mm
Vertical Lift	48 x 148 mm	58 x 242 mm	78 x 278 mm
Static Load	3.6 kg	10 kg	20 kg
Dynamic Load	2 kg	5,2 kg	8 kg

Ozone - Generator OZ-10 • OZ- 30

Ozone (O_3) i is a very strongly oxidizing molecule made up of 3 oxygen atoms. It is present as a gas and decomposes very quickly to normal oxygen (O2) under normal conditions in the air.

OZ-10

Due to its high oxidizing effect, Ozone is one of the strongest disinfectants.

If it is artificially generated in an ozone generator, it can be used very effectively in the fight against bacteria, viruses, fungi, and spores.

In this way, entire rooms can be disinfected quickly and efficiently without the use of expensive chemicals and without a considerable amount of work.

Ozonation is carried out during non-working hours, e.g. at night.

A built-in timer automatically switches the ozone generator on and off at the desired time.

The next morning, the excess ozone has already dissipated, and the room can be reentered.

Now the room is ventilated and can be used normally.

OZ-10 • OZ-30

- Effective against bacteria, viruses, and germs
- Effective even in hard-to-reach places
- Fast, also unscheduled implementation
- No staff and chemical costs
- Flexible to use
- Low investment needs

Technical Data	OZ-10	OZ-30
Ozone emission	10 g/h	30 g/h
Ambient condition	0 - 40 °C	
Working humidity	70 %	
Airflow	150 m^3/h	230 m^3/h
Operation volume	100 m^3	320 m^3
Working surface at 2.8 m room height	36 m^2	82 m^2
Power	130 W	250 W
Voltage • Frequency	220 - 240 V • 50 Hz	
Weight	4 kg	6 kg
Dimension	120 x 380 x 260 cm	220 x 440 x 305 cm

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