

## BOECO MICROPLATE SHAKER PSU-2T

Specially designed for medical diagnostic. Orbital shaking platform IPP-2 with a holding mechanism for 2 standard microtiter plates. The use of direct drive and brushless motor allows continuous mixing up to 7 days and ensures reliable, trouble-free operation. The variable speed control provides an optimally adapted speed range from 150 to 1200 rpm with an orbit of 2 mm.

### Specification:

Orbit size:	2 mm
Speed range:	150 - 1200 1/min
Speed display:	scale (min/max)
Timer:	digital, 1 min - 23h 59min / non-stop
Overall size:	220 x 205 x 90 mm
Weight:	2 kg
Power:	12 V. DC 2,0A (External power adapter)

### Code

### Description

BOE 8052000	Microtiter Plate Shaker PSU-2T, incl. platform IPP-2 AC Adapter 100-240V with Multi plug (EU, US, UK, AU)
BOE 8052002	Platform IPP-4 for 4 Microtiter Plates



PSU-2T



PLATFORM IPP-4

## BOECO MICROPLATE INCUBATOR SHAKER PST-60 HL

The PST-60 HL shakers provide orbital shaking of the samples and have a heating platform for 2 x 96 or 4 x 96 wells microplates and an upper heating lid. The display indicates simultaneous set and actual time, temperature and shaking speed. The PST-60 HL are ideal for a variety of cytochemistry, immunochemistry, biochemistry and research applications.

### Specification:

Temperature regulation range:	25°C ..... 60°C	
Temperature setting resolution:	0,1°C	
Temp. Stability:	± 0,1 °C	
Temp. Uniformity over the platform:	± 0,25 °C	
Time of thermoblock heating from RT till 37°C:	12 min.	
Orbit :	2 mm	
Max. height of micotest plate:	18 mm	
Speed regulation:	250 -1200 rpm / increment 10 rpm	
Timer with sound signal:	1 min - 96 hrs, increment 1 min	
Power (external) :	DC 12 V. 5 A	
	PST-60 HL	PST-60 HL 4
Platform dimensions:	250 x 150 mm	210 x 290 mm
Number of microplates:	2	4
Size :	270x260x125 mm	380x390x140 mm
Weight incl. power supply :	6,1 kg	8,8 kg

### Code

### Description

BOE 8072000	Microplate Incubator Shaker PST-60 HL, for 2 plates, AC 100-240V, 50/60 Hz
BOE 8072040	Microplate Incubator Shaker PST-60 HL 4, for 4 plates, AC 100V-240V, 50/60 Hz



PST-60 HL  
PLUS



PST-60 HL 4  
PLUS



OS-20 ILLUSTRATED WITH  
PP-4 PLATFORM

## BOECO UNIVERSAL ORBITAL SHAKER OS-20

Compact, low-profile, orbital laboratory shaker for versatile applications in the fields of biotechnology, microbiology and medical diagnostics. The OS-20 provides gentle rotational mixing and precise circulation at each point of the platform. Variable digital displayed speed control from 50-250 rpm. Digital timer for setting a time interval and continuous operation.

### Specification:

Kind of motion:	orbital
Orbit size:	20 mm
Speed regulation:	50 - 250 rpm
Speed display:	digital (LED)
Timer:	from 1 min to 999 min / continuous
Time display:	digital (LED)
Max. load:	2,5 kg excl. attachment
Power:	12 V. DC 2,0A (External power adapter)
Overall size :	265 x 270 x 70 mm (w/o attachment)
Weight:	3,2 kg.

### Code

BOE 8059000

### Description

Universal Orbital Shaker OS-20, AC Adapter 100-240V with Multi plug (EU, US, UK, AU)



PSU-10i ILLUSTRATED WITH  
UP-12 PLATFORM

## BOECO UNIVERSAL ORBITAL SHAKER PSU-10i

Equipped with the direct drive system and brushless motor, our compact, powerful and quiet microprocessor controlled orbital laboratory shaker for many general purpose shaking applications. Speed and time setting are easy and during operation the LCD status display clearly indicates both set and actual speed, plus set and elapsed time.

### Specification:

Kind of motion:	orbital
Orbit size:	10 mm
Speed regulation:	50 - 450 rpm
Speed display:	digital (LCD)
Timer:	from 1 min to 96 hours / continuous
Time display:	digital (LCD)
Max. load:	3 kg excl. attachment
Power:	12 V. DC 2,0A (External power adapter)
Overall size:	220 x 205 x 90 mm (w/o attachment)
Weight:	3,4 kg

### Code

BOE 8069200

### Description

Universal Orbital Shaker PSU-10i, AC Adapter 100-240V with Multi plug (EU, US, UK, AU)

## ACCESSORIES FOR OS-20 AND PSU-10i

### PLATFORM PP-4

### Code

BOE 8059001

### Description

Dish platform PP-4 with silicone mat for Petri dishes, culture flasks etc. 235 x 235 mm

### PLATFORM UP-12

BOE 8059002

Universal platform UP-12 for all kind of flasks 285 x 215 mm, stainless steel with variable clamping rolls and silicone mat.

### PLATFORM P-6/250

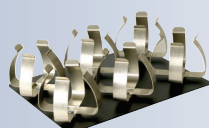
BOE 8059003

Numbers of flasks at the platform  
100- 150 ml flasks max 12-9 pieces  
200- 250 ml flasks max 6-4 pieces  
500-1000 ml flasks max 4-2 pieces

### PLATFORM P-12/100

BOE 8059004

Platform P-6/250 with fixed clamps for 6 flasks 250/300 ml, 250 x 190 mm  
Platform P-12/100 with fixed clamps for 12 flasks 100/150 ml, 250 x 190 mm



## BOECO PROGRAMMABLE ORBITAL SHAKER PSU-15i

The PSU-15i belongs to a generation of multifunctional mixing devices: The design, direct drive system, brushless motor (service life up to 35000 hours) and automatic loading balancing system make the PSU-15i even more reliable especially for the long non-stop operation. The PSU-15i has a microprocessor control which allows real-time program correction, indication of set and actual speed, angle and time, operation timer in the display.

### 1. Orbital motion



simple even circular motion - common type of motion used in shakers. Adjustable speed from 20 to 250 rpm.

### 2. Reciprocal motion



vertical rotation with changing direction of rotation. Adjustable turning angle (from 0° to 360°, increment 30°) sets the limits for this type of motion. The speed is the same as set for rotational motion (from 20 to 250 rpm).

### 3. Vortex motion of the platform (vibration)



intensive mixing of samples at high speed with small amplitude - Vortex motion. Adjustable turning angle of 0° to 5° (increment 1°)

### Specification:

Kind of motion:	orbital
Orbit size:	20 mm
Speed regulation:	20 - 250 rpm
Speed display:	digital (LCD)
Timer:	from 1 min to 96 hours / continuous
Time display:	digital (LCD)
Max. load:	8 kg
Continuous operation time:	max 168 hrs.
Power (external):	DC 12 V. 3,2 A
Overall size (w/o platform):	410 x 410 x 130 mm
weight:	11,7 kg

### Code

### Description

BOE 8079000	Orbital Shaker PSU-15i, 100-240VAC/12DC 4,16A without platform
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### Accessories

### Code

### Description

BOE 8079010	Universal platform UP-330 for all kind of flasks 430 x 330 mm, stainless steel with 4 variable clamping rolls and rubber mat.
BOE 8080011	Flat platform PP-20, 480 x 380 mm
BOE 8080012	4 level platform PP-20-4, 480 x 380 x 170 mm Distance between platforms: 170 mm Total height: 510 mm
BOE 8080005	Universal tray platform, 360 x 360 mm with holes to accommodate clamps for Erlenmeyer flasks, separating funnels and test tube racks Clamps have to be ordered separately
BOE 8081001	Spring clamp, 25 ml max.: 36 pcs.
BOE 8081002	Spring clamp, 50 ml max.: 36 pcs.
BOE 8081003	Spring clamp, 100 ml max.: 25 pcs.
BOE 8081004	Spring clamp, 250 ml max.: 16 pcs.
BOE 8081005	Spring clamp, 500 ml max.: 9 pcs.
BOE 8081006	Spring clamp, 1000 ml max.: 9 pcs.
BOE 8081007	Spring clamp, 2000 ml max.: 4 pcs.
BOE 8081009	Holding device for Separating funnels 250-1000 ml



PSU-15i WITH PLATFORM UP-330



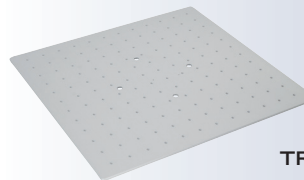
PSU-15i WITH TRAY PLATFORM



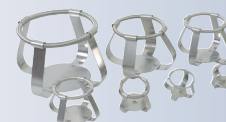
PP-20



PP-20-4



TRAY PLATFORM



SPRING CLAMPS



HOLDING DEVICE FOR SEPARATING FUNNELS



Available Q3/2018 !



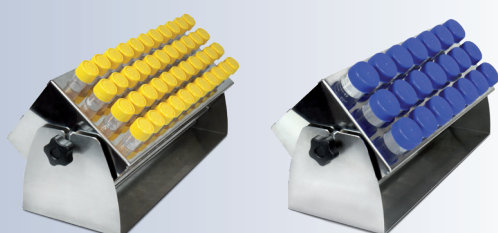
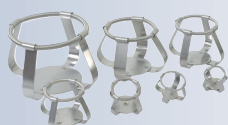
## BOECO ORBITAL SHAKER INCUBATOR ES-20/80

Our BOECO ES-20/80 shaker-incubator for biotechnological and pharmaceutical laboratories is a professional category equipment. The typical applications include microbiological and cell culture cultivation, protein expression, solubility studies, general mixing, as well as other various applications in the fields of biology and chemistry. The unit is equipped with a newly developed triple eccentric mechanism for platform motion that provides supreme balancing characteristics, superior reliability and quiet operation. The achieved stability of the unit during vigorous mixing allows for stacking installation of up to 3 units which enables to save space. The new display and easy to use user interface provide a clear and intuitive control of parameters and also allow data logging, storage and display over time. Additional features like out of balance sensor and automatic thermostat failure detection make this shaker-incubator an advanced and safe product. Bluetooth connectivity to PC allows for data management, data logging, parameter control and profiling in a dedicated software that can be requested separately.

A built-in heat-resistant brushless fan provides precise temperature distribution inside the chamber (from 10°C above ambient up to +80°C). Additionally, excellent sample temperature uniformity of  $\pm 0.3$  °C at 37 °C is achieved. The inner chamber is made of stainless steel. State-of-the-art motor, thermal insulation materials and parameter PID-control decrease the energy consumption and make the shaker-incubator highly energy efficient despite its relatively large size.

### Specification:

Speed control range	50–400 rpm (increment 10 rpm)
Digital time setting	1 min–96 hrs / non-stop (1 min increment)
Maximum continuous operation time	30 days
Maximum load	10,6 kg
Orbit	20 mm
Stacking	up to 3
Display	TFT
Data transfer	Bluetooth
Temperature setting range	+25°C... +80°C (increment 0,1°C)
Temperature control range	10°C above ambient... +80°C
Sample temperature uniformity	$\pm 0,3$ °C at 37°C
Temperature precision	$\pm 0,1$ °C at 37°C
Temperature accuracy	$\pm 0,1$ °C at 37°C
Sample temperature stability	$\pm 0,1$ °C at 37°C
Heat up time to max. temperature	75 min
Overall dimensions (WxDxH)	620 x 530 x 510 mm
Dimensions of the inner chamber	460 x 350 x 400 mm
Weight	48 kg
Nominal operating voltage	230 V, 50/60 Hz or 120 V, 50/60 Hz
Power consumption	230 V / 450 W (2 A) 120 V / 450 W (4.5 A)



Code	Description
BOE 8086000	Orbital Shaker Incubator ES 20/80 230V, 50/60Hz, without platform
BOE 8086100	Orbital Shaker Incubator ES 20/80 120V, 50/60Hz, without platform

### Accessories

Code	Description
BOE 8086400	Platform PP-400 360 x 400 mm with silicone mat
BOE 8080005	Universal tray platform 360 x 360 mm clamps have to be ordered separately
BOE 8081003	Spring clamp, 100 ml max.: 25 pcs.
BOE 8081004	Spring clamp, 250 ml max.: 16 pcs.
BOE 8081005	Spring clamp, 500 ml max.: 9 pcs.
BOE 8081006	Spring clamp, 1000 ml max.: 9 pcs.
BOE 8081007	Spring clamp, 2000 ml max.: 4 pcs.
BOE 8086015	Test tube rack TR-44/15 for 44 x 15 ml tubes
BOE 8086050	Test tube rack TR-21/50 for 21 x 50 ml tubes

## BOECO WATER BATH PWB-4 AND PWB-8

The personal advanced PID microprocessor controlled waterbath PWB-4 and PWB-8 with their specification, easy operation and small foot print are designed for chemical, pharmaceutical, medical and biological routine laboratory use and as well as for research purpose.

### ► Control Panel:

Easy setting and operating, adjustable temperature, alarm signal display Single Line 4 digitals LED

### ► Overheat Protection:

The power will automatically be turned off when the internal temperature is over 110 °C

### Specification

	PWB-4	PWB-8
Capacity:	4 l	8 l
Temperature Range:	Room Temperature +5°C.. +99,9°C	
Temperature Setting:	0,1°C	
Uniformity:	± 0,2 (37°C)	
Fluctuation of Temp.:	± 0,5°C (RT + 5 - 80°C), ± 0,8 (80 - 99,9°C)	
Heating Time:	≤ 100 min (from 30°C to 95°C at RT 25°C)	
Input Power:	400 W	600 W
Water outlet:	No	Yes
Bath Inner Dimensions: (LxWxH mm)	238x135x146	325x265x150
Outside Dimensions: (LxWxH mm)	380x212x250	445x285x316
Weight (net):	6,5 kgs	8 kgs

### PWB-4

Code	Description
BOE 8036000	Waterbath PWB-4, without lid, 220V, 50/60 Hz
BOE 8036100	Waterbath PWB-4, without lid, 115V, 60 Hz

### Accessories for PWB-4

Code	Description
BOE 8036001	Gabled plastic lid
BOE 8036002	Flat stainless steel lid with 2 concentric rings
BOE 8036018	Test tube rack st. steel with 41 x 18 mm ø holes
BOE 8036015	Test tube rack st. steel with 41 x 15 mm ø holes
BOE 8036003	Flask tray, stainless steel

### PWB-8

Code	Description
BOE 8037000	Waterbath PWB-8, without lid, 220V, 50/60 Hz
BOE 8037100	Waterbath PWB-8, without lid, 115V, 60 Hz

### Accessories for PWB-8

Code	Description
BOE 8037001	Gabled stainless steel lid
BOE 8037002	Flat stainless steel lid with 4 concentric rings
BOE 8037018	Test tube rack st. steel with 76 x 18 mm ø holes
BOE 8037015	Test tube rack st. steel with 76 x 15 mm ø holes
BOE 8037003	Flask tray, stainless steel



FLAT LID FOR PWB-4



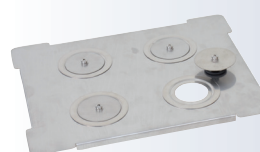
GABLED PLASTIC LID FOR PWB-4



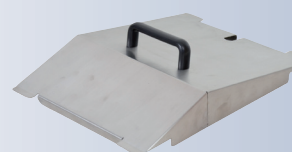
TEST TUBE RACK FOR PWB-4



FLASK TRAY FOR PWB-4



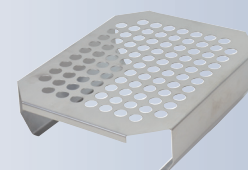
FLAT LID FOR PWB-8



GABLED LID FOR PWB-8



TEST TUBE RACK FOR PWB-8



FLASK TRAY FOR PWB-8

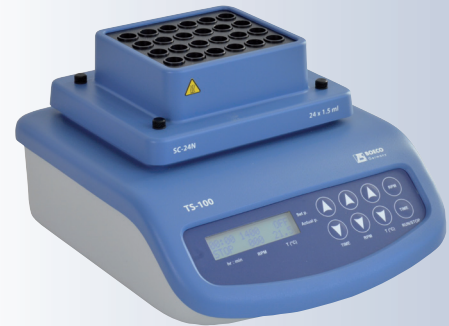
## BOECO THERMO-SHAKER FOR MICROTUBES, TS-100

is a compact and cost-efficient solution for shaking and temperature control of small samples in 0,5 ml, 1,5 ml and 2,0 ml microtubes. The TS-100 is microprocessor controlled and has a display which indicates simultaneous set and actual time, temperature and shaking speed.

### Specification:

Orbit size:	2 mm
Temperature range:	25°C - 100°C
Speed range:	250 - 1400 1/min, increment 10 rpm
Acceleration time:	3 sec
Timer with sound signal:	digital, 1 min - 96 h increment 1 min
Power (external):	DC 12 V. 5 A
Overall size:	205 x 230 x 130 mm
Weight:	3,20 kg

Code	Description
BOE 8064000	Thermo-Shaker for microtubes TS-100, without block, AC 100-240V 50/60 Hz
BOE 8064001	Interchangeable block, SC-18 for 20x0,5 ml and 12 x 1,5 ml microtubes
BOE 8064004	Interchangeable block, SC-18/02 for 20x0,2 and 12 x 1,5 ml microtubes
BOE 8064005	Interchangeable block, SC-24N for 24x1,5 ml microtubes
BOE 8064007	Interchangeable block, SC-24 for 24x2,0 ml microtubes
BOE 8064006	Interchangeable block, SC-96A for 96-well PCR microplate



TS-100 with block SC-24N

## BOECO THERMO-SHAKER FOR MICROTUBES, TS-100C

is a heating and cooling thermomixer. Active cooling using Peltier technology offers a temperature regulation range from +4°C to +100°C. Temperature control and mixing modes can be used simultaneously and independently. The TS-100C is microprocessor controlled and has a display which indicates simultaneous set and actual time, temperature and shaking speed. The low voltage power supply enables safe cold room or incubator operation. The TS-100C is applicable for DNA analysis, extraction of proteins, polysaccharids, lipids and other cell components

### Specification:

Speed range:	250 - 1400 1/min, increment 10 rpm
Acceleration time:	3 sec
Orbit size:	2 mm
Temperature control range:	15°C below room temp. to +100°C
Temperature setting range:	+4°C to 100°C
Average heating rate:	5°C / min (from +25 to +100°C in 15 min)
Average cooling speed:	From +100°C to +25°C: 5°C / min From +25°C to +4°C: 1,8°C / min
Timer with sound signal:	digital, 1 min - 96 h, increment 1 min
Power (external):	DC 12 V. 5 A
Overall size:	205 x 230 x 130 mm (w x d x h)
Weight:	3,7 kg

Code	Description
BOE 8064050	Thermo-Shaker for microtubes TS-100C, without block, AC 100-240V 50/60 Hz
BOE 8064051	Interchangeable block, SC-18C for 20x0,5 ml and 12 x 1,5 ml microtubes
BOE 8064054	Interchangeable block, SC-18/02C for 20x0,2 ml and 12 x 1,5 ml microtubes
BOE 8064057	Interchangeable block, SC-24NC for 24x1,5 ml microtubes
BOE 8064055	Interchangeable block, SC-24C for 24x2,0 ml microtubes
BOE 8064056	Interchangeable block, SC-96AC for 96-well PCR microplate



TS-100C with block

