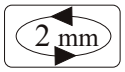
Contents

PSU-2T, Mini-shaker for immunology

Shaker PSU-2T provides regulated shaking for two or four 96-well microtest plates
It is a compact instrument with low profile and small footprint for personal application including immunoassays and colouration tests.
Shaker can be used in a cold room or incubator, operating ambient temperature range 4 °C to 45 °C
- Speed range: 150-1000 RPM
- Digital timer from 1 min to 24 hours with automatic switch off
- 2 mm orbit
- Capacity: 2 microtest plates - standard platform IPP-2
  4 microtest plates - optional platform IPP-4

General characteristics	
Overall dimensions	220x205x90 mm
Weight	1.8 kg
Power supply	External power supply: 12 V, 500 mA

PSU-2T



Horizontal uni-rotation

MR-1, Mini-rocker Shaker

MR-1

Rocking uni-rotation

Mini-Rocker Shaker MR-1 provides gentle rocking motion.
It is perfect for soft mixing of biological components
Its small size and low profile saves bench space in laboratory room
Shaker can be used for minigel staining and destaining, for Northern, Southern and Western blots, mixing test tubes, washes, rocking agglutination cards.
Shaker can be used in a cold room or incubator, operating ambient temperature range 4 °C to 45 °C
- Speed range: 7.5-30 RPM
- Digital timer 1 min to 24 hours with automatic switch off
- Rocking motion
- Fixed tilt angle - 7°
- Non-slip mat supplied as standard
- for load up to 0.5 kg
- Platform working size 200x200 mm

General characteristics	
Overall dimensions	220x205x120 mm
Weight	1.6 kg
Power supply	External power supply: 12 V, 500 mA

3D, Sunflower Mini-Shaker

Mini 3D Shaker provides regulated shaking (3D type) for mixing reagents in a wide spectrum of test tubes, agglutination cards, Petri dishes and other laboratory vessels.
It is a compact, personal use instrument with low energy consumption.
Shaker can be used for mixing blood samples, for minigel staining and destaining,washes, blotthybridization.
Shaker can be used in a cold room or incubator, operating ambient temperature range 4 °C to 45 °C.
- Speed range: 10-30 RPM
- Fixed tilt angle - 7°
- non-slip mat supplied as standard
- Platform working size - 200x200 mm
- For load up to 0.5 kg
- Optional adapter TP-26 for 26 tubes (up to 11 mm diameter)

General characteristics	
Overall dimensions	85x150x80 mm
Weight	1.0 kg
Power supply	External power supply: 12 V, 300 mA

3D

3D - uni-rotation

RS-24, Mini-rotator with timer for test tubes

RS-24 - minirotator is an ideal instrument for laboratory procedures which require changeable time of mixing (from 1 min till 24 hours)
Its variable speed adjusts mixing from a soft action to intensive agitation.
RS-24 is compact with low profile and small footprint.
It is an ideal instrument for small private clinics.
Rotator is applicable for mixing, diffusion, dialysing, etc. biological liquids in test tubes.
Rotator can be used in a cold room or incubator, operating ambient temperature range 4 °C to 45 °C
- Vertical orbital motion
- Speed range: 5-30 RPM
- Digital timer for 24 hour work
- Standard platform for 24 microtubes up to 14 mm diameter (1.5 ml, 2 ml, 15 ml tubes)
- Optional platform P-RS-8/50 for 8 tubes up to 30 mm diameter (50 ml tubes)
- Universal rubber clamps for tubes

RS-24

General characteristics	
Overall dimensions	255x145x130 mm
Weight	2.0 kg
Power supply	External power supply: 12 V, 500 mA

Vertical uni-rotation

RS-60, Rotator with mechanical timer for test tubes

RS-60

Rotator RS-60 is an ideal intrument for laboratory procedures which requires continuous mixing. Its variable speed adjsts mixing action from a gentle motion to rapid agitation.
Some of the procedures it can be used for are: embedding blood cell suspensions, tissue-culture specimens, washing of presipitates, homogenizing blood solid with plasma.
Rotator can be used in a cold room or incubator, operating ambient temperature range 4 °C to 45 °C
- Vertical orbital motion
- Speed range: 5-60 RPM
- Timer range 0-60 min. Timer has two modes: continuous (up to 24 hrs) and timed (up to 60 min)
- Standard platform for 48 microtubes up to 14 mm diameter (1.5 ml, 2 ml, 15 ml tubes)
- Optional platform P-RS-10/18 for 10 tubes up to 30 mm diameter (50 ml tubes) and 18 tubes up to 14 mm diameter (1.5 ml, 2 ml, 15 ml tubes)

Vertical uni-rotation

General characteristics	
Overall dimensions	395x245x185 mm
Weight	6.0 kg
Power supply	220/240 V, 50/60 Hz

OS-20, Orbital Shaker

OS-20 is a powerful variable speed shaker which provides efficient orbital motion.
OS-20 is a familiar instrument for many general purpose shaking applications in chemical, biomedical, microbiological and life science laboratories.
Shaker can be used in a cold room or incubator, operating ambient temperature range 4 °C to 45 °C
- Speed range: 50-250 RPM
- 20 mm orbit
- Digital speed control
- Digital timer 1 - 999 min
- Interchangeable platforms (see page 5; UP-12, P-12/100, P-6/250, PP-4)
- Maximum load capacity - 2.5 kg

OS-20

General characteristics	
Overall dimensions	220x190x70 mm
Weight	3.9 kg
Power supply	External power supply: 12 V, 800 mA

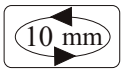
Horizontal uni-rotation

OS-10, Orbital Shaker

OS-10

OS-10 is a powerful quiet microprocessor controlled orbital shaker. It is an ideal instrument for many general purpose shaking applications in microbiology, chemical and life science laboratories. Shaker can be used in a cold room or incubator, operating ambient temperature range 4 °C to 45 °C.

- Speed range: 50-350 RPM (increment 10 RPM)
- Universal platform, flat platform or platforms with clamps (see below)
- Digital speed control
- Digital timer for 1 min - 96 hr
- Simultaneous indication of set and actual time and speed
- 10 mm orbit



Horizontal uni-rotation

General characteristics	
Overall dimensions	270x260x85 mm
Weight	3.0 kg
Power supply	External power supply: 12 V, 500 mA

Platforms for OS-20, OS-10 and ES-20 Shakers:

- UP-12 Universal platform with adjustable bars for different types of flasks, bottles and beakers dimensions w/d 270x195 mm
- PP-4 Flat platform with non-slip rubber mat for Petri dishes, culture flasks, agglutinatin cards dimensions w/d 220x220 mm
- P-12/100 Platform with clamps for flasks, 100-150 ml (12 places) dimensions w/d 250x190 mm
- P-6/250 Platform with clamps for flasks, 250 - 300 ml (6 places) dimensions w/d 250x190 mm

UP-12

P-12/100

P-6/250

PP-4

Orbital Multi-Shaker Multi PSU -20

Multi PSU-20 is the new model of PSU-20 Shaker.

- Powerful and extremely quite shaker with 3 types of motion.
- The platform UP-400 can hold a different type of flasks. Available two levels for holding.
- Electrically safe – powered by external AC/AC power supply
- User-friendly interface – real-time program correction, indication of set and actual speed, angle and time, operation timer
- Several shaking motions in one instrument, which can be used separately and consecutively in a cycle:
- *Orbital motion*

Simple orbital motion with an option of shifting direction (clockwise/anti-clockwise) after set time

Adjustable speed from 0 to 250 RPM.
Time from 0 till 250 sec.

- *Reciprocating Rotating motion*

Orbital motion with shifting direction of rotation

Adjustable turning angle from 0° to 360°, increment 30°
Speed the same as in *Orbital motion*
Time from 0 till 250 sec.

- *Vibration mode*

High speed, low amplitude motion

Adjustable turning angle from 0° to 6°, increment 1°. Time from 0 till 5 sec

- General operation timer from 0 till 24 hrs (increment 1 min) / non-stop
- Continuous operation time up to 72 hours
- Maximal load up to 15 kg
- Dimensions of UP-400 - 460x400 mm

Multi PSU- 20

Multi-rotation

General characteristics	
Overall dimensions	485x520x140 mm
Weight	18.35 kg
Power supply	External power supply, AC 12 V, 830 mA

Multi-Shakers and Multi-Rotators provide several motion types in one instrument substantially increasing the options for mixing the examined materials.

Our Multi-Shaker and Multi-Rotator range can be used for variety of applications, including the following:embedding blood cell suspensions, tissue-culture specimens, washing of presipitates, homogenizing blood solid with plasma, blot-hybridization.

Multi Bio RS-24, Programmable rotator-mixer

Intelligent bio -Rotator for soft & hard mixing microtubes and vacutainers.
Several options in 1 instrument:1. Rotation 2. Reciprocal rotation 3. Vortexing
- Microprocessor controlled time, shaking speed, turning angle and pause
- Speed range of vertical and reciprocal rotation mode 5 - 30 rpm
- Timer of vertical and reciprocal rotation mode 0 - 250 sec
- Turning angle of reciprocal rotation mode 15 - 90° (increment 15°)
- Turning angle of vortexing mode 0-5° (increment 1°)
- Pause/Vortex timer 0,1,2,….5 s
- General timer of device operation 0 - 24 hours
- Standard platform: 22 tubes up to 15mm diameter (1.5ml, 2ml, 15ml tubes)
- Optional combined platform PRS-4/12 for 4 tubes up to 30 mm diameter (50ml tubes) and 12 tubes up to 15 mm diameter (1.5ml, 2ml, 15ml tubes)

Multi Bio RS-24

General characteristics	
Overall dimensions	310x110x175 mm
Weight	1.6 kg
Power supply	External power supply: 12 V, 500 mA

Multi-rotation

Multi RS-60, Programmable rotator-mixer

Multi RS-60

Intelligent bio -Rotator for soft & hard mixing microtubes and vacutainers.
Several options in 1 instrument:1.Rotation 2.Reciprocal rotation 3.Vortexing
- Microprocessor controlled time, shaking speed, turning angle and pause
- Speed range of vertical and reciprocal rotation mode 5 - 60 rpm
- Timer of vertical and reciprocal rotation mode 0 - 250 sec
- Turning angle of reciprocal rotation mode 15 - 90° (increment 15°)
- Turning angle of vortexing mode 0-5° (increment 1°)
- Pause/Vortex timer 0,1,2,….5 s
- General timer of device operation 0 - 24 hours
- Standard platform: 48 tubes up to 15mm diameter (1.5ml, 2ml, 15ml tubes)
- Optional platforms:
  combined PRS-8/22 for 8 tubes up to 30 mm diameter (50ml tubes) and 22 tubes up to 15 mm diameter (1.5ml, 2ml, 15ml tubes)

General characteristics	
Overall dimensions	430x230x230 mm
Weight	3.7 kg
Power supply	External power supply, 12 V, 4.16 A

Multi-rotation

Multi Bio 3D, Programmable “3D Ballet Dancer” Shaker

Consecutive mixing stages with programmable time and movement types: rotation, reciprocation and vortexing
- Speed range 5 - 30 RPM (Orbital and reciprocating motion)
- Turning angle (Reciprocating motion) 0° - 360° (increment 30°)
- Turning angle (Vortexing motion) 0° - 6° (increment 1°)
- Platform tilt angle 7°
- Orbit diameter 22 mm
- Timer for Orbital and reciprocating motion 0 – 250 sec
- Timer for Vortex motion 0 – 5 sec
- Number of cycles 0 – 125 times
- Maximum load 1 kg

Multi Bio 3D

General characteristics	
Overall dimensions	170x220x150 mm
Weight	1.5 kg
Power supply	External power supply, 12 V, 500 mA

Multi-rotation

ES-20, Orbital Shaker-Incubator

ES-20

10 mm

ES-20 is a bench-top lower capacity shaking incubator.
Built-in temperature controller provides maintaining of the set temperature inside demountable plexiglass incubator chamber. Forced air circulation provides excellent heat transfer. This instrument has been designed to provide controlled and uniform conditions for biological growth.

- 10 mm orbit
- Electronic speed control with soft start
- Speed range: 50-250 RPM
- Digital timer 1 - 999 min
- Temperature range 25-42°C
- Temperature stability 0.1°C
- Maximum load capacity - 2.5 kg
- Plexiglass chamber (7 mm thick walls)
- Universal platform, platform with clamps or flat platform available(see page 7)

General characteristics	
Overall dimensions	330x340x425 mm
Weight	13.3 kg
Power supply	220/240 V, 50/60 Hz, 100 W External power supply: 12 V, 800 mA

TS-100, Thermo-Shaker for microtubes

Thermoshaker TS-100 is a space saving, compact and cost-efficient solution for shaking and temperature control of small samples in 0.5 ml and 1.5 ml microtubes.
Applications:
– DNA analysis
– extraction of lipids and other cell components
– DNA library creation

- Microprocessor controlled time, speed and temperature
- 2 mm orbit
- Speed range: 250-1400 RPM
- Digital timer 1 min - 96 hr
- Temperature range 25-100°C
- Simultaneous display of set and actual temperature, time and speed
- Two standard interchangeable blocks for Eppendorf microtubes:
  SC-18 20x0.5 ml microtubes + 12x1.5 ml microtubes
  SC-20 20x1.5 ml microtubes
- Other non-standard block are available upon request:
  for 20x0.2 ml microtubes + 12x1.5 ml microtubes & for 20x2 ml microtubes

TS-100

2 mm

SC-18

General characteristics	
Overall dimensions	205x230x130 mm
Weight	3.5 kg
Power supply	External power supply 12 V, 4 A

PST-60HL, Plate Shaker-Thermostat

PST-60HL

2 mm

Thermoshaker PST-60HL provides several functions in one instrument:
1) microplate thermoshaker; 2) incubator for two microplates without shaking
3) microplate shaker without temperature control
The main features: – Good temperature transfer to samples due to the simultaneous heating both of the platform and upper lid.
The two-directional heating provides:
– a very good temperature stability;
– prevents condensation, which is critical when handling microvolume samples at high temperature.
Application:
– Elisa immunodiagnostics
– microorganism cultivation
– DNA analysis
– matrix analysis in molecular chemistry.

- Microprocessor controlled time, speed and temperature
- 2 mm orbit
- Speed range: 250-1200 RPM
- Temperature regulation range 25-60°C
- Nominal regulation accuracy 0.1°C
- Digital timer 1 min - 96 hr
- Loading - heating platform for 2 x 96-well microtest plates & heating lid

General characteristics	
Overall dimensions	270x260x125 mm
Weight	6.2 kg
Power supply	External power supply: 12 V, 4.16 A

MSC-3000, Centrifuge/Vortex Multi-Spin

Centrifuge/vortex Multi-Spin is a next step of evolution of the centrifuge/vortex CombiSpin.
A must-have efective instrument for PCR-analysis.
Multi –Spin is four devices combined in one:
1.multitube centrifuge (till 1000 g; speed and time setting);
2.multitube vortex (3 modes - soft, medium, hard; time setting)
3.multitube centrifuge/vortex;
4.centrifuge/vortex/centrifuge cycler for realization of the SMS (Spin-Mix-Spin) algorithm.
Multi-Spin allows considerable time saving compared to Combi-Spin by automatically performing cycling program of micro sample mixing and spin according to the set SMS cycle for 12 pcs of micro tubes simultaneously.
SMS cycle is needed for collecting micro quantity of sample distributed on a cover and walls of micro tubes after mixing which give a reproducibility in micro sampling (total volume of samples smaller than 100 mkl).

- Spin regulation 1000 - 3500 RPM (increment 100 RPM)
- Spin timer 1 sec - 99 min
- Mixing strength soft, medium, hard
- Mixing time 0-20 sec (increment 1 sec)
- SMS-cycle regulation 1-999 cycles

- Two rotors included:
- RC-1.5 rotor for 12 x 1.5 ml microtubes
- RC-0.5/0.2 rotor for 12 x 0.5 ml + 12 x 0.2 ml microtubes
- SRC-16 rotor for 2 x 8-section 0,2 ml microtube strips is available as optional extra

MSC-3000

General characteristics	
Overall dimensions	170x220x120 mm
Weight	1.8 kg
Power supply	External AC/AC adapter,12V 830 mA

F/S-16, Multi-tube mixing Vortex for microtubes

F/S-16

For intensive stirring of bacterial and yeast cells, when washing them from culture medium and for metabolite extraction from cells.
In DNA technology - for deproteinisation of DNA/protein complexes and purification of low molecular weight DNA/RNA fragments in PCR-diagnostics.

- Shaking speed (constant) - 2400 RPM
- Platform for 16 x 0.5-2.0 ml microtubes
- Continuous and impulse mixing modes
- Orbit 2.5 mm

General characteristics	
Overall dimensions	120x155x140 mm
Weight	2.3 kg
Power supply	220/240 V, 50/60 Hz

V-1 plus, Single-tube mixing Personal Vortex

Ideal instrument for gentle mixing to vigorous resuspension of cells and biological and chemical liquid components.
Vortex can be used in a cold room or incubator, operating ambient temperature range 4 °C to 45 °C.

- Speed range: 250-3000 RPM
- Mixing module for tubes from 1.5 to 50 ml
- Eccentric mixing principle
- Continuous andimpulse (activated with touching the cap) operation

V-1 plus

General characteristics	
Overall dimensions	90x150x80 mm
Weight	0.9 kg
Power supply	External power supply 12 V, 500 mA

FVL-2400N, Mini-centrifuge/vortex Combispin

FVL-2400N

Specially designed for PCR-diagnostics research and other studies in genetic engineering.
- The new open design of popular CombiSpin FVL-2400
- Mixing and sedimentation on one spin-module
- Rotation speed (constant) - 2400 RPM
- Rotors R-1.5 and R-0.5/0.2 included
- Autostop when the lid open
- Max Rcf - 700 x g
- Continuous and impulse working modes

General characteristics	
Overall dimensions	170x220x120 mm
Weight	1.75 kg
Power supply	220/240 V, 50/60Hz

FV-2400, Mini-centrifuge/vortex Microspin

Specially designed for genetic engineering research
- Mixing and sedimentation on one spin-module
- Rotation speed (constant) - 2400 RPM
- Rotors R-1.5 and R-0.5/0.2 included
- Continuous and impulse working modes
- Max Rcf - 700 x g

General characteristics	
Overall dimensions	120x170x120 mm
Weight	1.5 kg
Power supply	220/240 V, 50/60Hz

FV-2400

R-1.5

R-0.5/0.2

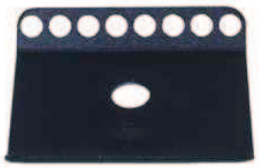
Available rotor types for FVL-2400N and FV-2400:
Standard:
- R-1.5
  rotor for 12 x 1.5 ml microtest tubes
- R-0.5/0.2
  rotor for 12 x 0.5 and12 x 0.2 ml microtest tubes

Optional:
- R-2/0.5
  rotor for 8 x 2.0 ml + 8 x 0.5 ml microtest tubes
- R-2/0.5/0.2
  rotor for 6x2,0 ml + 6x0.5 ml + 6x0.2 ml microtest tubes
- SR-16
  rotor for 2 x 8-section 0,2 ml microtube strips

R-2/0.5/0.2

R-2/0.5

SR-16



BWT-U, Universal water thermostat

High quality bath provides heating with 0.1°C stability
For use in medical, ecological monitoring and food control laboratories as well as in scientific research and microbiology laboratories.
- Constant mixing for temperature stabilisation
- Temperature range up to 100°C
- 8 l stainless steel bath (other on request)
- Digital temperature control
- Can be equipped with a flowing water cooler
- Optional lifting platform with adjustable height LP-1

General characteristics	
Overall dimensions	280x390x270 mm
Weight	7.5 kg
Power supply	220/240 V, 50/60 Hz ; max. 1 kW

BWT-U

LP-1

WB-4 & WB-4MS, Water thermostat-bath

WB-4

WB-4MS

Designed for chemical, pharmaceutical, medical and biological laboratory research.
- Temperature range 30-100°C
- Temperature stability 0.1°C (WB-4MS), 1°C (WB-4)
- 4 l stainless steel bath
- Magnetic stirring (WB-4MS) for temperature stabilisation (300-1000 RPM)
- Temperature setting: digital
- Temperature display: LED

General characteristics		
Overall dimensions	340x170x170 mm	340x170x200 mm
Weight	3.2 kg	4.5 kg
Power supply	220/240 V, 50/60 Hz ; max. 600W	

SC-2M, Sample cooler for molecular biology

The simple block construction combined with the powerfull Peltier module produces rapid cooling. Cool down time from room temperature to -5°C is less than15 min.
- Cooling temperature -5°C ... room temperature
- Temperature stability 0.5°C
- Aluminium block for 20 x 0.5 ml and 12 x 1.5 ml microtubes
- Temperature setting: analog
- Temperature display: LED

General characteristics	
Overall dimensions	190x190x150 mm
Weight	4.3 kg
Power supply	220/240 V, 50/60 Hz

SC-2M

TDB-120, "Dry-block" thermostat

TDB-120

TDB-120 can be used for variety of applications in different areas of molecular biology research.
- Temperature range 25-120°C
- Temperature stability 0.1°C
- Temperature setting: digital
- Digital timer 1 min - 96 hr for sample thermostating control
- Simultaneous indication of set and actual temperature and time
- Two models are available offering a choice of tube configurations to meet the needs of many standard laboratory procedures:
  with A-53 block for 21x 0.5 ml + 32 x 1.5 ml microtubes
  with A-103 block for 21x 0.5 ml + 32 x 1.5 ml+ 50 x 0.2 ml microtubes

General characteristics	
Overall dimensions	200x210x100 mm
Weight	4.0 kg
Power supply	220/240 V, 50/60 Hz ; max. 100 W

TDB-U-400 "Dry-block" type thermostat

Universal instrument for constant temperature maintenance of tubes or other vessels. Thermostat can be used in ecological monitoring, food quality analysis, biochemistry, for evaporation ("sand bath" option), etc.
- Temperature range 25-250°C
- "Sand bath" regime up to 400°C
- Temperature setting: digital
- Temperature adjusting accuracy 0.1°C
- Digital temperature control
- Aluminium blocks for tubes of different size

TBD-U-400

General characteristics	
Overall dimensions	330x150x120
Weight	4.0 kg
Power supply	220/240 V, 50/60 Hz; max.600 W

Accessories for TDB -U- 400:

SL-1	Aluminium block for 100 ml glasses, 2 sockets, diameter upto 56 mm
T-18	Aluminium block for tubes, 18 sockets, diameter upto 11mm
T-10	Aluminium block for tubes, 10 sockets, diameter upto 18 mm
MT-6/4	Aluminium block for tubes, 6/4 sockets, diameter upto 13,5/25,5 mm

CH-100, Heating/Cooling dry block

Product is the result of the combination of two popular BioSan instruments:
1.Heating dry Block and
2. Cooling Dry block thermostat
The unique block construction combined with the powerful Peltier module produces very rapid cooling and heating for change of application.
CH-100 is a very effective instrument for DNA analysis sample preparation, including storing frozen enzymes restriction, denaturing electrophoresis, for hybridization reaction.
- Microprocessor controlled time and temperature
- Simultaneous indication of set and actual temperature and time
- Temperature regulation range - 10°C … + 100°C
- Temperature deviation in the centre of the thermoblock from the set temperature in the range from 0°C to +80°C 0.5°C
- Temperature deviation at the borders of the thermoblock from the set temperature in the range from 0°C to +40°C 0.5°C
- Temperature deviation at the borders of the thermoblock from the set temperature in the range from +40°C to +80°C 2.0°C
- Setting resolution 0.1°C
- Working room temperature range +15°C … +27°C
- Independent timer with sound signal 1 min - 96 hrs
- Two models available:

1) with CH-1 block for 20 x 0,5 ml microtubes
   + 12 x 1,5 ml microtubes
2) with CH-2 block for 20 x 1.5 ml microtubes

CH-100

General characteristics	
Overall dimensions	240x260x165 mm
Weight	4.1 kg
Power supply	220/240 V, 50/60 Hz ; max.100 W

MS-3000, Mini Magnetic Stirrer

Small and convenient instrument for routine procedure in general type laboratory work.
Powerful stirring allows dispergating different chemical and biological multi-component mixtures.
- Speed range: 150-3000 RPM
- Stirs without undesirable heat and noise
- Stirring volume up to 2 l
- Stainless steel working plate
- Working plate size - 110x110 mm

General characteristics	
Overall dimensions	120x150x65 mm
Weight	1.0 kg
Power supply	External power supply 12 V, 300 mA

MS-3000

MMS-3000, Magnetic Stirrer with a stand

MMS-3000

Compact and convenient instrument for routine procedure in general type laboratory work.
Powerful stirring allows dispergating different chemical and biological multi-component mixtures.
An attachable stand allows fixation of different laboratory accessories such as titration birettes, temperature sensors, etc.
- Speed range: 0-3000 RPM
- Stirring volume up to 5 l
- Stainless steel working plate
- Working plate size - 150x150 mm
- Stand height - 320 mm

General characteristics	
Overall dimensions	165x200x65 mm
Weight	1.5 kg
Power supply	External power supply 12 V, 300 mA

MSH-300, Magnetic Stirrer with Hot plate

Convenient and easy to use magnetic stirrer with heating for routine procedures in organic synthesis, environmental laboratories, and general type laboratory work.
- Speed range: 250-1250 RPM
- Stirring volume up to 2 l
- Temperature range 30-330°C
- Working plate heating till 330°C in 20 min
- Aluminium working plate provides uniform heating over the whole surface.
  (Attention! Alkali can damage aluminium surfaces)
- Working plate size - 150x150 mm
- Consumed power (mixing mode) 8.5 W
- Consumed power (heating mode) 600 W

General characteristics	
Overall dimensions	170x210x95 mm
Weight	2.7 kg
Power supply	220/240 V, 50/60 Hz

MSH-300

UVR-M, UV-air flow Cleaner - Recirculator

UVR-M

UV-cleaner is applicable for disinfecting different type premises including biomedical research laboratory rooms, operating rooms in clinics, waiting rooms in outpatients departments, veterinary stations, in the production premises of food industry. Designed specially for biosafety DNA,RNA, microbe decontamination while user is protected from direct UV-light.

- Cleaning effectivity - 90% (constant work)
- 1 x 15 W UV lamps
- Productivity 25 m^3/hr
- Convenient placement on walls
- High anti-bacterial activity

General characteristics	
Overall dimensions	82x92x600 mm
Weight	3.7 kg
Power supply	220/240 V, 50/60 Hz

UVC/T, UVC/T-AR DNA/RNA UV-cleaner box

For DNA/RNA decontamination at the laboratory working place for maximum aseptic conditions

- Bench-top model
- Two 15W UV-lamp decrease contamination levels during 15-30 min of UV exposure. White 1x15W lamp provides local illumination of the working area and guarantees good conditions for visual control of operations.
- Long living UV lamps (7000 hr)
- UV exposition digital control
- Walls made of 10 mm plexiglass, the frame and working area of painted stainless steel.
- Can be equipped with a flowing bactericidal air recirculator (model UVC/T--AR), which provides constant decontamination inside the box (see below).

General characteristics	
Overall dimensions	690x515x555 mm
Weight	22 kg
Power supply	220/240 V, 50/60 Hz

UVC/T

UVC/T-M, UVC/T-M-AR DNA/RNA UV-cleaner box

UVC/T-M-AR

For DNA/RNA decontamination at the laboratory working place for maximum aseptic conditions

- Bench-top model
- Two 15W UV-lamp decrease contamination levels during 15-30 min of UV exposure. White 1x15W lamp provides local illumination of the working area and guarantees good conditions for visual control of operations.
- Long living UV lamps (7000 hr)
- UV exposition digital control
- Walls made of 10 mm glass covered with UV-protected film, the frame and working area made of stainless steel
- Can be equipped with a flowing bactericidal air recirculator (model UVC/T-M-AR), which provides constant decontamination inside the box (see below).

General characteristics	
Overall dimensions	690x515x555 mm
Weight	22 kg
Power supply	220/240 V, 50/60 Hz

Both models of DNA/RNA UV-cleaner box can be equipped with an additional UV - air flow cleaner (UV-recirculator) for biosafety DNA decontamination to protect the user from direct UV-light during operation.

UV-recirculator consists of a UV lamp, fan and dust filters organized in a special box for maximum increasing (1000 x fold) the density of UV-light leading sufficiently to effective DNA /RNA inactivation. UV-recirculator generates 100 Volumes of the PCR box per 1 hour air flow exchange giving a maximum aseptic conditions inside the Box.

DNA/RNA UV-cleaner box with UV-recirculator (models UVC/T-AR and UVC/T-M-AR correspondingly) is recommended for labs working in the field of DNA/RNA and proteins analysis, genetic engineering, molecular biology.

Thermal cycler BioCycler TC-S

Thermal cycler BioCycler TC-S - for DNA probes multiplication

Specifications:

Combined Block for 25 pcs x 0.2 ml tubes
16 pcs x 0.5 ml tubes

Temperature control range	+4..+99.9 °C
Temperature increment ……	0,1 °C
Uniformity .....…….....	Up to 0,3 °C
Heating hood temperature…...	50 - 105 °C
Ramping speed	Up to 3 °C/sec
File settings:	
- Number of steps in a file	1 - 9
- Number of steps in a cycle	1 - 7
- Number of cycles	1 - 99
- Step time	1 sec - 99 min
- Step time increment	1 sec
Programmable file number	Up to 100 files
Voltage …….....….....	220/240 V, 50/60 Hz
	110/120 V, 50/60 Hz
Power, max. .....……..	100W
Size …….....….....	240 x 260 x 165 mm
Weight.. ……..……..…	4.2 kg

Comparison of two thermal cyclers - BioCycler TC-S (BioSan) and a reference thermocycler (one of the most wide spread thermocyclers)

Kindly presented by PhD Maris Lazdinjsh, Latvian University

Settings:
Target for amplification:
NADH dehydrogenase Gene of *Zymomonas mobilis*
PCR product contains 3` part of NADH dehydrogenase Gene
Predicted length of PCR product (entrez access Nr AF180145)- 833 bp
Primers:
NADH1c 5'-CCAGAACCATGATTGCTC-3'
NADH1d 5'-ACGAAGCTTTAGGGCGTAACATGC-3'
(with 5` extension)

PCR conditions:
Each reaction (20 µl) contains:
1x PCR buffer, 2 mM $MgCl_2$, 0,2 mM each of dNTP, 0,75 U recombinant *Taq* Pol (MBI Fermentas), 12 pmol of each primer (BMC), 100 ng (2 µl) of genomic DNA (laboratory extraction). All reactions were fully premixed together. Before adding of genomic DNA for negative control 18 µl of mix was taken to a new tube and 2 µl of water was added.
Amplification performed in 0,2 ml tubes without mineral oil (hot lid approach).

Thermal profile:
Initial heating: 1 min for 94°C;
40 cycles of steps: 40 sec for 95°C, 40 sec for 60°C, 60 sec for 72°C;
final extension 5 min for 72°C.

Results:

Duration:
Duration of PCR with BioCycler TC-S (BioSan) - 2 hrs 10 min
Duration of PCR with a reference thermocycler (one of the most wide spread thermocyclers) - 2 hrs 15 min

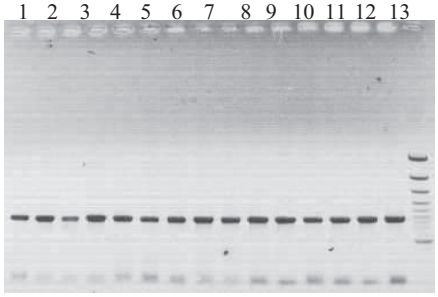


Figure 1. PCR products separated on the 0,8% agarose gel (12x6 cm, 0,5xTAE). On the gel was loaded 5 µl of PCR products. Lanes 1-15 - Biocycler TC-S, PCR products 1-15 respectively. Lane 16 - 100 bp. DNA Ladder Plus (MBI Fermentas), 0,2 µg loaded, only bands 3 000 - 500 are visible.

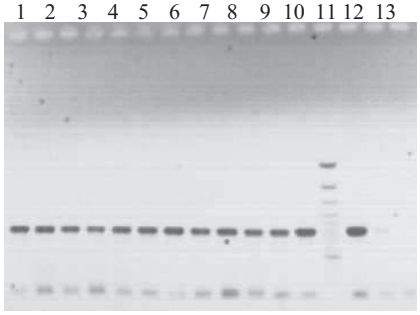


Figure 2. PCR products separated on the 0,8% agarose gel (12x6 cm, 0,5xTAE). On the gel was loaded 5 µl of PCR products. Lanes 1-12 - Biocycler TC-S, PCR products 14-25 respectively. Lanes 14-16 - a reference cycler, PCR products 26-28 respectively (28 - negative control, tube 27 has a reduced volume [10 µl instead 20 µl]). Lane 13 - 100 bp. DNA Ladder Plus (MBI Fermentas), 0,2 µg loaded, only bands 3000 - 1031 are visible.

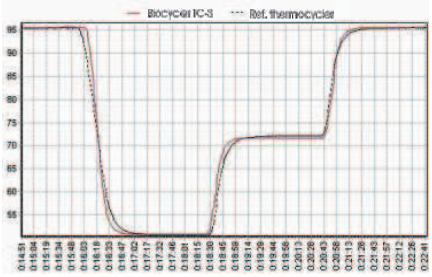


Figure 3. Comparison of temperature ramping between a reference thermocycler (one of the most wide spread thermocyclers) and BioCycler TC-S (BioSan) acquired by Temperature Datalogger (BioSan).

DL-12, Portable Temperature Datalogger

Using the latest technology in the field of electronic data transmission BioSan has developed a range of multi-channel Temperature Data Loggers.

The system can be easily adapted for the conditions required by the client and offers an elegant solution for continuous temperature control in laboratory premises, deep-freezers, refrigerators and incubators.

In standard version probes are intended for work in extreme conditions from -50° C to +125° C. It is possible to purchase probes that will work in -200° - +500° temperature range. Data recording rate can be programmed in the range 1 sec - 24 hr.

Data storage on the hard disk of a PC allows accumulating data for a long period of time (for example for 1.5 years).

The operation of the system can be described as follows: the probes installed in the controlled objects continuously scan the temperature and transfer it to DataLogger via cables. Further, the information is transferred to a computer, where it is processed by the appropriate software, saved in the memory and displayed on the monitor in a graphic / table format.

Graphing of temperature against time and textual reports can be printed out or saved for the client's convenience.

Program Features:

- simultaneous display of data from all probes and timed data recording into the database
- copying produced graphs to clipboard or saving in *.jpg format
- setting maximum and minimum alarm temperatures for each probe
- display of maximum, minimum and average temperature in the graphs and textual reports
- real time readings for each probe

System requirements: Pentium 166 or better, Windows 95/98/2000/XP/ME, VGA/SVGA card, 32 Mb RAM (128 Mb recommended).

The Datalogger set includes software, user manual, external power supply adapter, communication cable RS-232, temperature probes.

DEN-1, McFarland Densitometer

This product is used in laboratories' routine work for the detection of susceptibility of microorganisms against antibiotics or for identification of microorganisms with various test-systems, etc.

The instrument can perform measurement of solution's turbidity at wide range 0.3 – 15.0 McFarland units. Instrument is precalibrated and keeps calibration without any power supply. Operating with instrument simply install tube with unknown solution and read McFarland value on the instrument's indicator. Customer can recalibrate instrument by its requirements with E. coli solutions by two or six points between McFarland 0.5 – 5.0. The instrument's microprocessor controls all of the operating steps.

The bio-design and extremely easy handling makes it a pleasure to use this product.

Technical specifications

Light source:	Light diode
Wavelenght:	565 nm
Tube type, diameter:	16 mm
Reaction volume:	2 - 10 ml
Data presentation:	digital indicator
Power consumption:	1,5 W, 12 V, DC

MM-1000, Laboratory programmable mechanical stirrer Multi Mixer

Laboratory programmable stirrer (bioforma design) for stirring quantities up to 20 litres with digital display and possibility to realize three types of motion: Rotational, Reciprocal and Vibration.

Display shows simultaneously two values of speed - set and actual speed.

Speed of stirring is under control by microprocessor.

Multi-mixer can be used up to the "medium viscosity" range.

Ideal instrument for biotechnology, organic synthesis , analytical preparation laboratories.

The innovative combination of three types of motion helps reaching high homogeneity.

Accessories:
1. Propeller stirrer, 2-3-4 bladed
2. Centrifugical stirrer
3. Paddle stirrer
4. Anchor stirrer
5. Screw-type stirrer

Speed regulation range	4 - 1000 RPM
Timer for Rotational and Reciprocal motion	0 - 250 sec
Turning angle for Reciprocal motion	0° - 360° (increment 30°)
Turning angle for Vibro motion	0° - 5° (increment 1°)
Timer for Vibro motion	0 5 sec
General timer of device operation	0-24 hrs (increment 1 min)
Power External AC/AC adapter	12 V, 830 mA
Dimensions	135x400x250 mm
Weight	2,3 kg

Multi-rotation

UVT-S-AR, DNA/RNA UV-cleaner box, PCR - workstation

This new model is designed for placement of large instruments on the base work area. The length of the box was increased twice in comparison with our traditional model UVC/T-M DNA/RNA cleaning box.
Extended workspace allows more comfortable operation.

UVT/S-AR box includes the installed UV-air recirculator as standard equipment. This option additionally prevents unwanted amplification of contaminant DNA and protects the user from direct UV-light during manipulation.

Specifications

- Resistant stainless steel work surface (1200x520 mm)
- Triplex electrical outlet mounted in the backside panel
- UV exposure digital control by electronic timer
- White lamp for local illumination
- Three positions - adjustable opening of front door (work space clearance)
  low - 60 mm
  midi - 125 mm
  high - 190 mm
- Overall dimensions - 1240x540x550 mm
- Weight - 55 kg

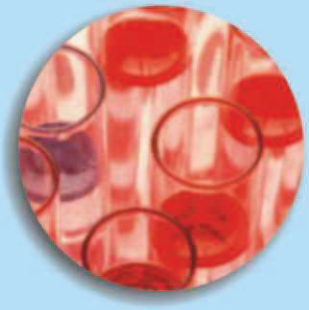
Bio TDB-100, Dry block thermostat

Specifications

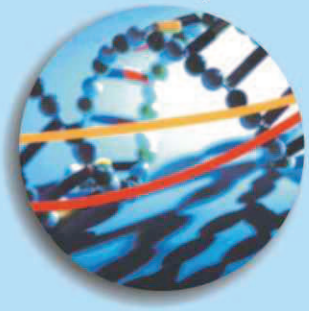
• Temperature regulation range	+25°C ... +100°C
• Setting resolution	0.1°C
• Nominal regulation accuracy	± 0.5°C
• Independent timer with sound signal	1 min - 96 hrs
• Display	LCD
• Simultaneous display of set and actual temperature and time	
• Block capacity	24 x 2/1,5 ml, 15 x 0.5 ml, 10 x 0.2 ml microtubes
• Block diameter/depth	130/45 mm
• Power	220/240 V, 50/60 Hz; 200 W
• Dimensions	210x230x110 mm

Environmental Research

Chemistry



DNA Analysis



Microbiology

Immunology

LKB Vertriebs GmbH
Wurzbachgasse 18, A-1150 Vienna, Austria
Phone: +43 1 982 9527
Fax: +43 1 984 3714
E-mail: lkb@lkb.at
http://www.lkb.at