

ES-20, Orbital Shaker-Incubator

DESCRIPTION

The **ES-20** is a compact bench-top Shaker-Incubator used for mixing of biological liquids as well as for incubation and cultivation of biological liquids according to the operator set program

Built-in microprocessor thermocontroller provides constant temperature control in the incubator chamber. Forced heated air circulation inside the transparent plexiglas chamber guarantees even temperature distribution. Dismountable construction makes transportation easy.

Orbital shaking is controlled by the digital tachometer (rpm) and Digital time setting regardless of the temperature. The unit is equipped with the direct-drive system ensuring most reliable stable long-time operation (up to 30 day nights).

The **ES-20** is extremely easy to operate, with very straightforward setup of temperature, speed and time, using the two line set-up and status display, which clearly indicates both set and actual values for each of the three parameters.

Five interchangeable platforms allow using the **ES-20** for:

- Growing cell cultures in flasks and other laboratory glassware;
- Extracting tissue samples at physiological temperatures;
- Other sample preparation processes.

SPECIFICATIONS

Temperature setting range	+25°C ... + 42°C
Temperature control range	5°C above ambient ... + 42°C
Speed control range	50–250 rpm (increment 10 rpm)
Temperature stability	±0.5°C
Temperature setting resolution	0.1°C
Temperature accuracy at +37°C	±0.5°C
Temperature uniformity at +37°C	±0.5°C
Orbit	10 mm
Display	LCD, 2 × 16 signs
Digital time setting	1 min–96 hrs / non-stop (1 min increment)
Timer sound signal	+
Plexiglas walls thickness	7 mm
Maximum load	2.5 kg
Maximum continuous operation time	30 days
Dimensions of the inner chamber	305×260×250 mm
Overall dimensions (W×D×H)	340×340×435 mm
Weight	13.2 kg
Power consumption (230V / 120 V)	160 W (0.7 A) / 170 W (1.6 A)
Nominal operating voltage	230 V, 50/60 Hz or 120 V, 50/60 Hz



CAT. NUMBER

Without platform	Without platform
BS-010111-AAA	230VAC 50/60Hz Euro plug
BS-010111-AAB	230VAC 50/60Hz UK plug
BS-010111-AA3	230VAC 50/60Hz AU plug
BS-010111-AAC	100VAC 50/60Hz US plug, 120VAC 60Hz US plug
BS-010111-CK	IQ OQ document
BS-010111-DK	PQ document



UP-12
BS-010108-AK
platform

Universal platform with adjustable bars for different types of flasks, bottles, and beakers with silicone mat.



P-12/100
BS-010108-EK
platform

Platform with clamps for flasks.



P-6/250
BS-010108-DK
platform

Platform with clamps for flasks.



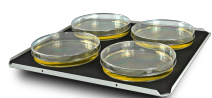
P-16/88
BS-010116-BK
platform

Platform with spring holders for up to 88 tubes up to 30 mm diameter (e. g. 10 ml, 15 ml, 50 ml tubes).



HB-200
BS-010108-FK

Additional holding bar for UP-12



PP-4
BS-010108-BK
platform

Flat platform with non-slip silicone mat for Petri dishes, culture flasks, agglutination cards.



SPM
BS-010111-BK
double-sided adhesive mat

Double-sided adhesive mat. **SPM** is compatible with **PP-4** platform, that fits both on **PSU-10i** orbital shaker and in **ES-20** Shaker-Incubator.

ES-20/60, Orbital Shaker-Incubator

DESCRIPTION

Orbital Shaker-Incubator **ES-20/60** for biotechnological and pharmaceutical laboratories is a professional category equipment designed for cultivation of microorganisms and eukaryotic cells including animal, plant and insect cells. It is also possible to cultivate thermophilic bacteria in **ES-20/60** shaker-incubator.

Shaker is equipped with a direct-drive mechanism for platform motion. It provides reliable and stable operation for the long term experiments needed for cell growth.

Shaker-Incubator **ES-20/60** provides smooth or intensive mixing in flasks installed on the platform.

Built-in noiseless thermoresistant brushless fan provides precise temperature distribution inside the chamber (adjustable for up to +80°C). The inner chamber is made of stainless steel. State-of-the-art motor, newest thermal insulation materials, soft-start of the platform motion and temperature PID-control decrease the energy consumption and make the Shaker-Incubator highly energy efficient despite its relatively large size.



SPECIFICATIONS

Temperature setting range	+25°C... +80°C
Temperature control range	10°C above ambient... +80°C
Speed control range	50–250 rpm (increment 10 rpm)
Temperature stability	±0.5°C
Temperature setting resolution	0.1°C
Temperature accuracy at +37°C	±2°C
Temperature uniformity at +37°C	±2°C
Orbit	20 mm
Display	LCD, 2 × 16 signs
Digital time setting	1 min–96 hrs / non–stop (1 min increment)
Timer sound signal	+
Maximum load	8 kg
Maximum continuous operation time	30 days
Dimensions of the inner chamber	460 × 400 × 310 mm
Overall dimensions (W×D×H)	590 × 525 × 510 mm
Weight	41.1 kg
Power consumption (230V / 120 V)	450 W (2 A) / 450 W (4.5 A)
Nominal operating voltage	230 V, 50/60 Hz or 120 V, 50/60 Hz

CAT. NUMBER

Without platform	Without platform
BS-010135-AAA	230VAC 50/60Hz Euro plug
BS-010135-AAB	230VAC 50/60Hz UK plug
BS-010135-AA3	230VAC 50/60Hz AU plug
BS-010135-AAC	120VAC 60Hz US plug
please, inquire	100VAC 50/60Hz US plug
BS-010135-HK	IQ OQ document
BS-010135-IK	PQ document



P-30/100
BS-010135-BK
platform

Platform with clamps for flasks.



P-16/250
BS-010135-CK
platform

Platform with clamps for flasks.



P-9/500
BS-010135-AK
platform

Platform with clamps for flasks.



P-6/1000
BS-010135-DK
platform

Platform with clamps for flasks.



PP-400
BS-010135-FK
platform

Flat platform with non-slip silicone mat can accommodate various low profile containers.



UP-168
BS-010135-JK
platform

Universal platform with clamps can accommodate flasks or bottles of different volume sizes. Clamps are not included with platform and need to be ordered separately.



SPML
BS-010135-MK
double-sided adhesive strips

Double-sided adhesive strips. **SPML** is compatible with **UP-168** platform, that fits both on **PSU-20i** orbital shaker and in **ES-20/60**, **ES-20/80** Shakers-Incubators.



TR-44/15
BS-010135-LK
rack

Adjustable angle test tube rack for UP-168



TR-21/50
BS-010135-KK
rack

Adjustable angle test tube rack for UP-168



FC-50
BS-010126-MK
clamp

Clamp 50 ml - Ø50 mm for UP-168



FC-100
BS-010126-HK
clamp

Clamp 100 ml - Ø65 mm for UP-168



FC-250
BS-010126-JK
clamp

Clamp 250 ml - Ø85 mm for UP-168



FC-500
BS-010126-LK
clamp

Clamp 500 ml - Ø105 mm for UP-168



FC-1000
BS-010126-IK
clamp

Clamp 1000 ml - Ø130 mm for UP-168

ES-20/80, Orbital Shaker-Incubator

DESCRIPTION

ES-20/80 shaker-incubator for biotechnological and pharmaceutical laboratories is a professional category equipment. The typical applications include - microbial 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 the included software.

A built-in heat-resistant brushless fan provides precise temperature distribution inside the chamber (from 5 °C above ambient up to +80 °C). Additionally, excellent sample temperature uniformity of ± 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.



CAT. NUMBER

Software included, without platform	Software included, without platform
BS-010167-A05	230VAC 50/60Hz Euro plug
BS-010167-A06	230VAC 50/60Hz UK plug
BS-010167-A07	230VAC 50/60Hz AU plug
please, inquire	100VAC 50/60Hz US plug
BS-010167-AK	IQ OQ document
BS-010167-BK	PQ document

SPECIFICATIONS

Temperature setting range	+25°C... +80°C
Temperature control range	5°C above ambient... +80°C
Speed control range	50–400 rpm (increment 10 rpm)
Temperature setting resolution	0.1°C
Temperature stability	±0.1°C
Temperature accuracy at +37°C	±0.1°C
Temperature uniformity at +37°C	±0.3°C
Orbit	20 mm
Display	TFT, 5 inches
Digital time setting	1 min–96 hrs / non–stop (1 min increment)
Timer sound signal	+
Maximum load	10.6 kg
PC system requirements	Intel/AMD Processor, 1 GB RAM, Windows Vista/7/8/8.1/10/11, USB, Bluetooth
Dimensions of the inner chamber	460 × 400 × 310 mm
Overall dimensions (W×D×H)	620 × 530 × 510 mm
Weight	48 kg
Power consumption (230V / 120 V)	500 W (2.2 A) / -
Nominal operating voltage	230 V, 50/60 Hz

ACCESSORIES



PP-400
BS-010135-FK
platform

Flat platform with non-slip silicone mat can accommodate various low profile containers.



HSP-6/1000
BS-010167-LK
platform

Platform with tight fit clamps for flasks.



HSP-9/500
BS-010167-NK
platform

Platform with tight fit clamps for flasks.



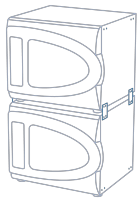
HSP-16/250
BS-010167-MK
platform

Platform with tight fit clamps for flasks.

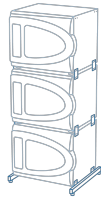


HSP-30/100
BS-010167-KK
platform

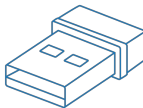
Platform with tight fit clamps for flasks.



Stacking kit for 2 × ES-20/80 | ES-20/80C
BS-010167-OK



Stacking kit for 3 × ES-20/80 | ES-20/80C
BS-010167-PK



Bluetooth adapter
BS-010425-FK
Bluetooth adapter



UP-168
BS-010135-JK
platform

Universal platform with clamps can accommodate flasks or bottles of different volume sizes. Clamps are not included with platform and need to be ordered separately.



SPML
BS-010135-MK
double-sided adhesive strips

Double-sided adhesive strips. SPML is compatible with UP-168 platform, that fits both on PSU-20i orbital shaker and in ES-20/60, ES-20/80 Shakers-Incubators.



TR-44/15
BS-010135-LK
rack

Adjustable angle test tube rack for UP-168



TR-21/50
BS-010135-KK
rack

Adjustable angle test tube rack for UP-168



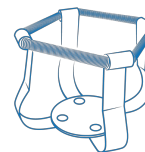
HSC-50
BS-010167-DK
clamp

Tight fit clamp 50 ml - Ø50 mm for UP-168



HSC-100
BS-010167-EK
clam

Tight fit clamp 100 ml - Ø65 mm for UP-168



HSC-250
BS-010167-FK
clamp

Tight fit clamp 250 ml - Ø85 mm for UP-168



HSC-500
BS-010167-JK
clamp

Tight fit clamp 500 ml - Ø105 mm for UP-168



HSC-1000
BS-010167-IK
clamp

Tight fit clamp 1000 ml - Ø130 mm for UP-168

ES-20/80C, Orbital Shaker-Incubator with cooling

DESCRIPTION

ES-20/80C shaker-incubator for biotechnological and pharmaceutical laboratories is a professional category equipment. The typical applications include - microbial and cell culture cultivation, protein expression, solubility studies, general mixing, as well as other various applications in the fields of biology and chemistry.

It is the new version with integrated cooling capability of highly successful shaker-incubator ES 20/80. 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 allows for 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 the included software.

A combination of an electric heating element and a built-in heat-resistant brushless fan provides precise temperature distribution inside the chamber from 10 °C below ambient up to +80 °C. Cooling of the chamber is provided by additional Peltier modules allowing to cool until -12.5 °C from the ambient temperature. Additionally, an excellent sample temperature uniformity of ± 0.2 °C at 37 °C is achieved.



CAT. NUMBER

Software included, without platform	Software included, without platform
BS-010173-A01	230VAC 50/60Hz Euro plug
BS-010173-A02	230VAC 50/60Hz UK plug
BS-010173-A03	230VAC 50/60Hz AU plug

SPECIFICATIONS

Temperature setting range	+4°C... +80°C
Temperature control range	12.5°C below ambient... +80°C
Speed control range	50–400 rpm (increment 10 rpm)
Temperature setting resolution	0.1°C
Temperature accuracy at +37°C	±0.1°C
Temperature uniformity at +37°C	±0.2°C
Orbit	20 mm
Display	TFT, 5 inches
Digital time setting	1 min–96 hrs / non-stop (1 min increment)
Timer sound signal	+
Maximum load	10.6 kg
PC system requirements	Intel/AMD Processor, 1 GB RAM, Windows Vista/7/8/8.1/10/11, USB, Bluetooth
Dimensions of the inner chamber	460 × 400 × 325 mm
Overall dimensions (W×D×H)	620 × 620 × 510 mm
Weight	50 kg
Power consumption (230V / 120 V)	810 W (3.7 A) / -
Nominal operating voltage	230 V, 50/60 Hz

ACCESSORIES



PP-400
BS-010135-FK
platform

Flat platform with non-slip silicone mat can accommodate various low profile containers.



HSP-6/1000
BS-010167-LK
platform

Platform with tight fit clamps for flasks.



HSP-9/500
BS-010167-NK
platform

Platform with tight fit clamps for flasks.



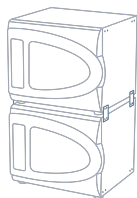
HSP-16/250
BS-010167-MK
platform

Platform with tight fit clamps for flasks.

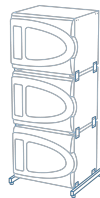


HSP-30/100
BS-010167-KK
platform

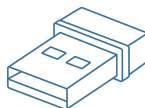
Platform with tight fit clamps for flasks.



Stacking kit for 2 × ES-20/80 | ES-20/80C
BS-010167-OK



Stacking kit for 3 × ES-20/80 | ES-20/80C
BS-010167-PK



Bluetooth adapter
BS-010425-FK
Bluetooth adapter



UP-168
BS-010135-JK
platform

Universal platform with clamps can accommodate flasks or bottles of different volume sizes. Clamps are not included with platform and need to be ordered separately.



SPML
BS-010135-MK
double-sided adhesive strips

Double-sided adhesive strips. SPML is compatible with UP-168 platform, that fits both on PSU-20i orbital shaker and in ES-20/60, ES-20/80 Shakers-Incubators.



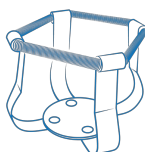
TR-44/15
BS-010135-LK
rack

Adjustable angle test tube rack for UP-168



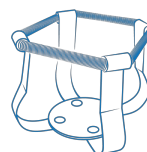
TR-21/50
BS-010135-KK
rack

Adjustable angle test tube rack for UP-168



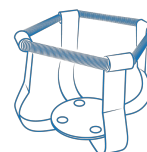
HSC-50
BS-010167-DK
clamp

Tight fit clamp 50 ml - Ø50 mm for UP-168



HSC-100
BS-010167-EK
clam

Tight fit clamp 100 ml - Ø65 mm for UP-168



HSC-250
BS-010167-FK
clamp

Tight fit clamp 250 ml - Ø85 mm for UP-168



HSC-500
BS-010167-JK
clamp

Tight fit clamp 500 ml - Ø105 mm for UP-168



HSC-1000
BS-010167-IK
clamp

Tight fit clamp 1000 ml - Ø130 mm for UP-168