

# 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 setting resolution    | 0.1°C                                     |
| Temperature stability             | ±0.5°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.



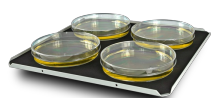
**P-16/88**  
BS-010116-BK  
platform

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.



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