

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.

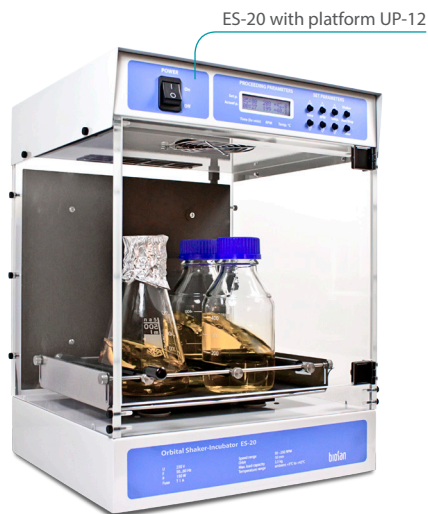
Built-in microprocessor thermocontroller provides constant temperature control in the incubator chamber. Forced heated air circulation inside the transparent plexiglas chamber guarantees even temperature distribution. Dismountable construction makes transportation easy.

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).

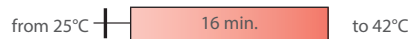
The **ES-20** is extremely easy to operate, with very straightforward setup of temperature, speed and time, using the two line set-up and status display, which clearly indicates both set and actual values for each of the three parameters.

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.



HEAT UP TIME FOR ES-20



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.

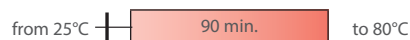
Shaker is equipped with a direct-drive mechanism for platform motion. It provides reliable and stable operation for the long term experiments needed for cell growth.

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.



HEAT UP TIME FOR ES-20/60



ES-20 and ES-20/60, Orbital Shakers-Incubators

	ES-20	ES-20/60
Temperature setting range	+25°C ... +42°C	+25°C... +80°C
Speed control range	50–250 rpm	
Temperature control range	5°C above ambient ... +42°C	10°C above ambient ... +80°C
Setting resolution	0.1°C; 1 rpm	0.1°C; 10 rpm
Temperature stability	±0.5°C	
Orbit	10 mm	20 mm
Display	LCD, 2 × 16 signs	
Digital time setting	1 min. – 96 hrs. / non-stop (1 min increment)	
Plexiglas walls thickness	7 mm	—
Maximum continuous operation time	2.5 kg	8 kg
Overall dimensions (W×D×H)	340×340×435 mm	590×525×510 mm
Dimensions of the inner chamber	305 × 260 × 250 mm	460 × 350 × 400 m
Weight	13.2 kg	41.1 kg
Nominal operating voltage	230 V, 50/60 Hz or 120 V, 50/60 Hz	
Power consumption (230/120 V)	160 W (0.7 A)/170 W (1.6 A)	450 W (2 A)/ 450 W (4.5 A)

ES-20 with platform P-6/250



ES-20/60 with platform PP-400



ORDERING INFORMATION:

ES-20 without platform

ES-20/60 without platform

Cat. number

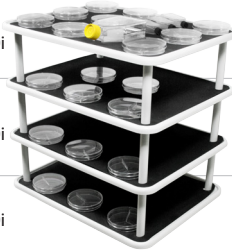


BS-010111-AAA

BS-010135-AAA

Platforms for PSU-10i and ES-20

Platform	Description	Dimensions	Working Area	Cat. Number
1 UP-12 Used on PSU-10i, ES-20 	Universal platform with adjustable bars for different types of flasks, bottles and beakers with silicone mat	285 × 220 × 40 mm	270 × 195 × 40 mm	BS-010108-AK
2 Bio PP-4 Used on PSU-10i 	Flat platform with silicone mat for Petri dishes, culture flasks, agglutination cards	255 × 255 mm	230 × 230 mm	BS-010116-AK
3 PP-4 Used on ES-20 	Metallic flat platform with silicone mat for Petri dishes, culture flasks, agglutination cards	220 × 220 mm	215 × 215 mm	BS-010108-BK
4 P-12/100 Used on PSU-10i, ES-20 	Platform with clamps for flasks, 100–150 ml (12 places)	250 × 190 mm	250 × 190 mm	BS-010108-EK
5 P-6/250 Used on PSU-10i, ES-20 	Platform with clamps for flasks, 250–300 ml (6 places)	250 × 190 mm	250 × 190 mm	BS-010108-DK
6 P-16/88 Used on PSU-10i, ES-20 	Platform with spring holders for up to 88 tubes up to 30 mm diameter (e. g. 10 ml, 15 ml, 50 ml tubes)	275 × 205 × 75 mm	275 × 205 × 75 mm	BS-010116-BK

Platforms for PSU-20i and ES-20/60

Platform	Description	Dimensions	Working Area	Cat. number
1 UP-330 Used on PSU-20i 	Universal platform with adjustable bars for different types of flasks, beakers	345 × 430 × 105 mm	300 × 400 × 80 mm	BS-010145-AK
2 P-30/100 Used on PSU-20i, ES-20/60 	Platform with 30 clamps for 100-150 ml flasks	360 × 400 mm	360 × 400 mm	BS-010135-BK
3 P-16/250 Used on PSU-20i, ES-20/60 	Platform with 16 clamps for 250-300 ml flasks	360 × 400 mm	360 × 400 mm	BS-010135-CK
4 P-9/500 Used on PSU-20i, ES-20/60 	Platform with 9 clamps for 500 ml flasks	360 × 400 mm	360 × 400 mm	BS-010135-AK
5 P-6/1000 Used on PSU-20i, ES-20/60 	Platform with 6 clamps for 1000 ml flasks	360 × 400 mm	360 × 400 mm	BS-010135-DK
6 PP-400 Used on ES-20/60 	Flat platform with non-slip silicone mat	360 × 400 mm	400 × 360 mm	BS-010135-FK
7 UP-168 Used on PSU-20i, ES-20/60 	Universal platform for different flasks (Clamps ordered separately)	360 × 400 mm	360 × 400 mm	BS-010135-JK
7.1 FC-100 7.2 FC-250 7.3 FC-500 7.4 FC-1000 	Clamp for 100, 250, 500, 1000 ml flask (for UP-168)	Ø 65mm Ø 85mm Ø 105mm Ø 130mm		BS-010126-HK BS-010126-JK BS-010126-LK BS-010126-IK
8.4 PP-20/4 Used on PSU-20i 	Four-level flat platform with non-slip rubber mat	380 × 480 × 510 mm	365 × 465 × 510 mm	BS-010126-EK
8.3 PP-20/3 Used on PSU-20i 	Three-level flat platform with non-slip rubber mat	380 × 480 × 340 mm	365 × 465 × 340 mm	BS-010126-DK
8.2 PP-20/2 Used on PSU-20i 	Two-level flat platform with non-slip rubber mat	380 × 480 × 170 mm	365 × 465 × 170 mm	BS-010126-CK
8.1 PP-20 Used on PSU-20i 	One-level flat platform with non-slip rubber mat	380 × 480 mm	365 × 465 mm	BS-010126-BK