Certomat® BS-1
The stackable incubation shaker

Benefits

- stacks three units high with full speed
- fully programmable
- capacity 6 + 5 L flasks

Three CERTOMAT® BS-1 incubation shaking cabinets can be stacked up and run independently each on its own program. Due to the adjustable mass compensation system there is no need to reduce shaking speed of the upper units – all units can be run with full load at top speed.

Temperature, shaking speed and illumination can be defined and stored in five programs with four steps and one pre-step each. Safety features include visual and acoustic alarms, a memory function for automatic re-start after power failure, and recording of the time and duration of interruptions. An integrated spill tray prevents any liquid media from broken flasks from entering the mechanical system.

The CERTOMAT® BS-1 is available with a choice of two shaking amplitudes and with or without integrated cooling. Further optional accessories are an illumination unit, a support frame and an additional incubation grid that can be mounted in the upper part of the cabinet. The interior of the incubation cabinet is completely made of polished stainless steel. IQ/OQ documents for use of the CERTOMAT® BS-1 in validated processes are available.

Ordering information

CERTOMAT® BS-1 version with circulation/heating (UH)

230 V/50 Hz CERTOMAT® BS-1/25 mm	**BBI-8865027**
230 V/50 Hz CERTOMAT® BS-1/50 mm	**BBI-8865124**
115 V/60 Hz CERTOMAT® BS-1/25 mm	**BBI-8865035**
115 V/60 Hz CERTOMAT® BS-1/50 mm	**BBI-8865132**

CERTOMAT® BS-1 version with circulation/heating/cooling (UHK)

230 V/50 Hz CERTOMAT® BS-1/25 mm	**BBI-8865221**
230 V/50 Hz CERTOMAT® BS-1/50 mm	**BBI-8865329**
115 V/60 Hz CERTOMAT® BS-1/25 mm	**BBI-8865230**
115 V/60 Hz CERTOMAT® BS-1/50 mm	**BBI-8865337**

All instruments are delivered without tray and other accessories.

For growing cells or mixing liquids, a tray is needed together with additional accessories to hold shaking flasks, separation funnels or tubes.

Technical specifications

Mechanical Data

Dimensions	W × H × D = 1150 × 720 × 770 mm
Incubation chamber	W × H × D = 890 × 495 × 650 mm
Weight (without tray)	198 kg
Housing	Steel construction, stainless steel interior
Drive mechanism	Brushless motor, triple eccentric drive with adjustable mass compensation
Trays, type/size	Type E/EU (420 × 420), Type F/FU (800 × 420 mm)
Tray fixation	Simple snap mechanism
Max. load	20 kg, mass compensation according to load
Stacking	Up to 3 units, without speed reduction
Protection	IP21

Electrical specifications

Connection	Class I cold socket, separate cable approx. 3 m
Protection class	I
Line voltage	230 V|50 Hz or 115 V|60 Hz
Heating capacity	650 W
Cooling capacity	500 W
Illumination	90 W (5 × 18 W), max. 2.500 Lux
Fuses	2 × T6.3 A for 230 V, 2 × T10 A for 115 V
Interference	According to DIN EN 55022 and DIN EN 61000

Operating specifications

Mode of shaking	orbital, ∅ 25 mm oder 50 mm, according to version
Shaking speed	40 to 400 rpm
Accuracy	max. ±1% of final value
Incubation temperature	RT +8°C to +70°C (UH) | RT –10°C to +70°C (UHK)
Setting/display	Alphanumeric key pad, LCD
Programming	Up to 5 programs with 4 steps and 1 pre-step, with cycling
Programmable parameters	Speed, time, temperature, illumination
Timing	0:01 to 98:59 hours; continuous action at 99:00 hours
Memory function	Restart after power failure
Alarms	Acoustic and visual
Air circulation	Approx. 180 m3/h
Ambient temperature	+10°C to +35°C (UH) | +10°C to +30°C (UHK)
Humidity	Avoid extreme humidity

Data output

Analogue	For speed and temperature, 9-pin SUB-D socket, 0 to 10 V or 0 to 20 mA resp. 4 to 20 mA (modification by technical service)
Digital	For speed and temperature, printout via RS232 interface, initiated by pressing "START" button during action, and for service functions
Collective alarm	Potential-free contact (closer), max. 230 VAC (0,5 A Ohm load) via SUB-D socket "Analog Out"Pin 4/9