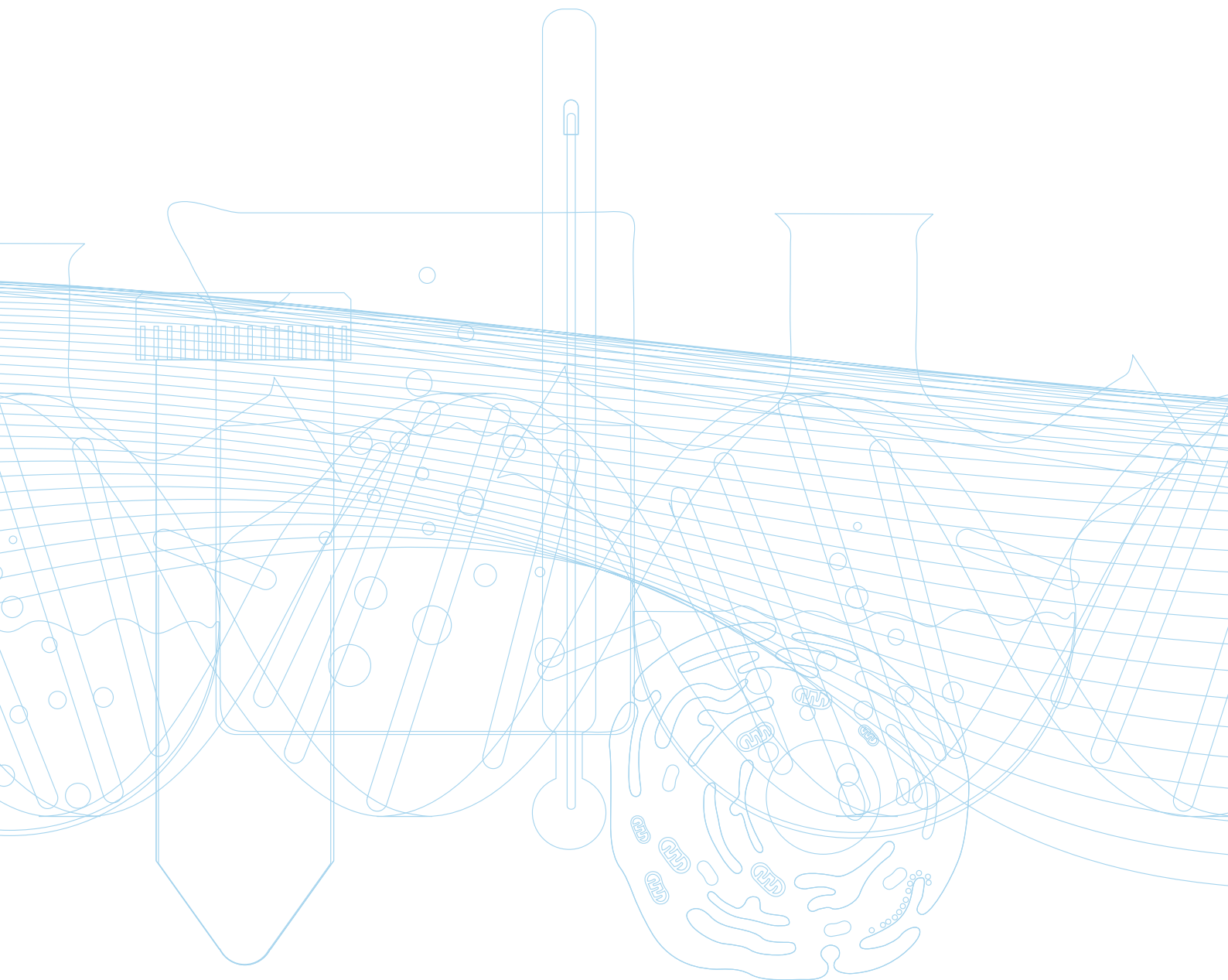


3 Thermoshakers





Thermoshakers

A range of compact, efficient and highly versatile thermoshakers, with excellent temperature uniformity, ideal for applications requiring heating/cooling and shaking in microplates and microtubes. Suitable for use in cold rooms and incubators (operating temperature range 4 to 40°C).

By combining the mixing operation with the incubation phase, reaction process times and operator workload are reduced and efficiency of many procedures is increased, resulting in a higher throughput.

- Thermoshakers for microtubes
- Thermoshakers for microplates
- Thermoshaker for microplates and microtubes

PCMT heating and cooling thermoshakers
for microtubes and microplates



PHMP

thermoshakers for two and four microplates

PHMT-PSC microtube thermoshaker



PHMP- 4

PCMT – thermoshaker with cooling for microtubes and PCR plates

Variable speed, variable temperature heating and cooling thermoshaker with a choice of blocks for microtubes and microplates.

- Fast heat-up and cooling times
- Temperature setting range +4°C to +100°C
- Temperature control range 15°C below ambient to +100°C
- Shaking speed: 250 to 1400 rpm
- Temperature uniformity $\pm 0.1^\circ\text{C}$

Fast heat-up and cooling times. Quick to reach specified mixing speed.

Even mixing across the thermoshaker block

Excellent uniformity across the block.

Digital timer with sound alarm 1 min to 96 hours

PCMT microplate and microtube thermoshaker with cooling

Choice of 5 interchangeable blocks including a block suitable for microplates:

- HC18 20 (20 x 0.5 ml and 12 x 1.5 ml microtubes)
- HC15 (20 x 1.5 ml microtubes)
- HC32 (20 x 0.2 ml and 12 x 1.5 ml microtubes)
- HC24 (24 x 2 ml microtubes)
- HC96 (96-well microplate for PCR, 0.2 ml)

Block is required. Specify when ordering.

Quiet motor operation, compact size and reliable

Clear 16 x 2 character LCD display indicates the set and actual time of operation, mixing speed and temperature

Simultaneous or independent heating and mixing functions

Applications

Genetic analyses - extraction of DNA, RNA and further sample preparation
Biochemical studies of enzymatic reactions and processes
Extraction of metabolites from cellular material



Thermoshaker PHMT for microtubes

Variable speed, variable temperature thermoshaker combining three instruments in one for maximum versatility and efficiency:

- a microtube thermoshaker
- a compact benchtop incubator without shaking
- a microtube shaker operating at ambient + 5°C

- **Temperature setting range: + 25°C to 100°C**
- **Temperature control range: + 5°C above ambient to 100°C**
- **Uniformity $\pm 0.1^\circ\text{C}^*$**
- **Shaking speed: 250 to 1400 rpm**
- **Rapid heat-up**
- **Continuous or timed operation, with alarm and automatic switch-off facility**
- **Capacity for up to 20 or up to 32 microtubes**

* 25 to 40°C

2-line LCD display clearly indicates both set and actual values for temperature, shaking speed and time

Easy programming via simple push buttons and display

PSC-18 microtube block can accommodate two different microtube sizes:

- 20 x 0.5 ml plus
- 12 x 1.5 ml microtubes

Choice of four models available:

- PHMT-PSC-15 (20 x 1.5 ml microtubes)
- PHMT-PSC-18 (20 x 0.5 ml plus 12 x 1.5 ml microtubes)
- PHMT-PSC-20 (20 x 2.0 ml microtubes)
- PHMT-PSC-24 (24 x 2.0 ml microtubes)

For additional blocks please refer to the specifications table on page 3.6

PHMT-PSC-20 microtube thermoshaker

Convenient interchangeable block for 20 or 32 microtubes provides flexibility for an easy change in application

The powerful motor operates extremely smoothly, quietly and consistently. With 'soft' start function for delicate samples

Timer 1 min to 96 hours

Low voltage cord easily fits through incubator door gaskets

Compact and sturdy, with a low profile and small footprint – fits neatly into the workspace and provides years of reliable service

Applications

DNA analyses - DNA extraction

Biochemical studies of enzymatic reactions and processes

Extraction of metabolites from cellular material



Thermoshaker PHMP and PHMP-4 for microplates

Excellent temperature uniformity across the platform/microplate (due to the bi-directional heating system) combined with variable speed and variable temperature produces the ideal thermoshaker for microplate incubations.

Can be used with all types of standard depth microplates and offers three instruments in one for maximum versatility and efficiency:

- a microplate thermoshaker
- a compact benchtop incubator without shaking
- a microplate shaker operating at ambient + 5°C

- **Temperature setting range: + 25 to 60°C**
- **Stability $\pm 0.1^{\circ}\text{C}$, uniformity $\pm 0.2^{\circ}\text{C}$ due to the bi-directional heating system (platform and lid)**
- **Shaking speed: 250 to 1200 rpm**
- **Rapid heat-up**
- **Continuous or timed operation, with alarm buzzer and automatic switch-off facility**
- **Choice of two models with capacity for two or four microplates**

The heated lid completely covers the heating platform to provide bi-directional heating and a controlled micro-environment. This produces excellent temperature stability and uniformity, whilst preventing condensation

Display of both set and actual temperature and shaking speed

Very easy to operate, with simple set-up of temperature, shaking speed and time via push buttons and the 2-line LCD status display

Soft start/stop protects samples



Model shown PHMP thermoshaker for two microplates

The **PHMP-4** has the same functionality as the PHMP but can accommodate four microplates



The powerful, reliable motor and sturdy construction combine to provide years of consistent operation




Low voltage cord easily fits through incubator door gaskets

Suitable for applications in many fields including: immunochemistry, molecular diagnostics, ELISAs, molecular biology (for microbial cell cultivation and DNA analysis), cytochemistry (for in situ reactions), biochemistry (for enzyme and protein analysis) and molecular chemistry (for matrix analysis).

Thermoshakers » Models and specifications





Thermoshakers – models and specifications

● = option

		Microplate and microtube thermoshaker	2-plate thermoshaker	4-plate thermoshaker
		PCMT	PHMP	PHMP-4
		 h: 130 mm d: 230 mm w: 205 mm	 h: 125 mm d: 250 mm w: 265 mm	 h: 140 mm d: 390 mm w: 380 mm
Temperature setting range	°C	+ 4 to 100	+ 25 to 60	
Temperature control range		15° below ambient to +100°C	+ 5°C above ambient to 60°C	
Temperature uniformity		±0.1	± 0.2 (@ + 37°C)	
Temperature stability	°C	–	± 0.1	
Temperature display		2 line x 16 character LCD	2 line x 16 character LCD	
Average heat up speed		5°C / min from +25°C to +100°C (HC15 block)	12 mins (from 25°C to 37°C) 35 mins (from 37°C to 60°C)	
Average cooling speed (HC15 block) @ +100°C to + 25°C @ + 25°C to + 15°C below ambient		5°C / min 1.8°C / min	–	–
Capacity	microtubes	see accessories below	–	–
Capacity	microplates	1	2	4
Shaking speed	rpm	250 to 1400	250 to 1200	
Speed setting resolution	rpm	–	10	
Orbit diameter	mm	2	2	
Timer (with auto-off and audible alarm)		1 min to 96 hours (1 min increment)	1 min to 96 hours (1 min increment)	
Max. height of microplates	mm	–	18	
Weight	kg	4	7	9
Input voltage	V dc	12	12	
Input current	A	4.16	4.16	
External power supply	V	120 or 230	120 or 230	

Accessories

HC15 interchangeable block for 20 x 1.5 ml microtubes	●	–	–
HC18 interchangeable block for 20 x 0.5 ml microtubes plus 12 x 1.5 ml microtubes	●	–	–
HC24 interchangeable block for 24 x 2.0 ml microtubes	●	–	–
HC32 interchangeable block for 20 x 0.2 ml microtubes plus 12 x 1.5 ml microtubes	●	–	–
HC96 interchangeable block for 96-well microplates (0.2 ml)	●	–	–

Thermoshakers – models and specifications				
● = option	For microtubes			
	PHMT-PSC15	PHMT-PSC18	PHMT-PSC20	PHMT-PSC24
	 h: 130 mm d: 230 mm w: 205 mm	 h: 130 mm d: 230 mm w: 205 mm	 h: 130 mm d: 230 mm w: 205 mm	 h: 130 mm d: 230 mm w: 205 mm
Temperature setting range	°C + 25 to 100			
Temperature control range	°C + 5°C above ambient to 100°C			
Temperature uniformity over the block @ +25°C to +40°C	± 0.1			
@ +40°C to +70°C	± 0.2			
Display	2 line x 16 character LCD			
Heat up speed RT to 100°C (PSC-20)	2.5°C/min			
Capacity microtubes	20	32	20	24
Shaking speed rpm	250 to 1400			
Orbit diameter mm	2			
Timer (with auto-off and audible alarm)	1 min to 96 hours (1min increment)			
Weight kg	4			
Input voltage V dc	12			
Input current A	4.16			
External power supply V	120 or 230			
Accessories				
PSC -15 additional interchangeable block for 20 x 1.5 ml microtubes	●	●	●	●
PSC -18 additional interchangeable block for 20 x 0.5 ml microtubes plus 12 x 1.5 ml microtubes	●	●	●	●
PSC - 20 additional interchangeable block for 20 x 2.0 ml microtubes	●	●	●	●
PSC - 24 additional interchangeable block for 24 x 2.0 ml microtubes	●	●	●	●
PSC - 32 additional interchangeable block for 20 x 0.2 ml microtubes plus 12 x 1.5 ml microtubes	●	●	●	●
PSC - 96 interchangeable block for 96-well microplates (0.2 ml)	●	●	●	●

* depending on choice of block