

# 11 Thermoshakers

## **Thermoshaker with cooling**

PCMT for microtubes and microplates

## **Thermoshaker**

PHMT for microtubes and microplates

## **Thermoshaker for microplates**

PHMP and PHMP-4 for 2 or 4 microplates



## 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°C to +40°C).

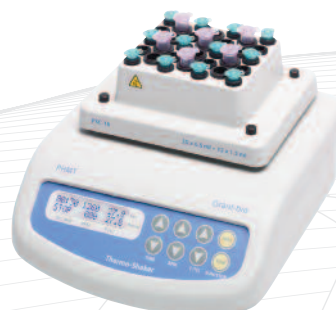
By combining the mixing operation with heating/cooling, reaction process times and operator workload are reduced and the efficiency of many procedures is increased, resulting in a higher throughput.

- Thermoshaker with cooling for microtubes, microplates and PCR plates - PCMT
- Thermoshakers for microplates and PCR plates - PHMP
- Thermoshaker for microtubes, microplates and PCR plates - PHMT

**2**  
year warranty



**PCMT** thermoshaker with cooling for microtubes and microplates



**PHMT** thermoshaker for microtubes and microplates



**PHMP** thermoshaker for two microplates



**PHMP-4** thermoshaker for four microplates

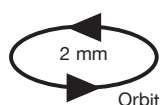
## Thermoshakers » PCMT thermoshaker with cooling for microtubes and microplates

# PCMT – thermoshaker with cooling for microtubes and PCR plates

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

- a microtube and microplate thermoshaker
- a compact benchtop incubator
- a microtube and microplate shaker

- **Fast heat-up and cooling times**
- **Temperature setting range +4°C to 100°C**
- **Temperature control range ambient -15°C to +100°C**
- **Shaking speed: 250 to 1400 rpm**
- **Temperature stability  $\pm 0.1^\circ\text{C}$**
- **Improved fast start 3s to maximum shaking speed**
- **Temperature calibration function**



**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

**New upgraded! Temperature calibration function** to compensate for differences in the thermal behaviour of different tubes and samples

**Low voltage cord** fits easily through door gaskets, safe and economical running



### PCMT microplate and microtube thermoshaker with cooling

#### Choice of 5 interchangeable blocks:

- HC18 (20 x 0.5 ml and 12 x 1.5 ml microtubes)
- HC32 (20 x 0.2 ml and 12 x 1.5 ml microtubes)
- HC24N (24 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/cooling and mixing functions**


**New upgraded! Fast start** - acceleration 3 seconds

- Applications:**
- Life-science - genetic analyses, extraction of DNA, RNA and further sample preparation, biochemical studies of enzymatic reactions and processes, extraction of metabolites from cellular materia, incubation, agitation, digestion of samples/standards for peptide mapping

## Thermoshakers » PCMT » Models and specifications

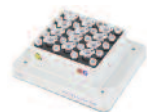
### Thermoshakers with cooling – models and specifications

● = option

		Microplate and microtube thermoshaker
		PCMT
		
Temperature setting range	°C	+4 to 100
Temperature control range		15°C below ambient to +100°C
Temperature uniformity over the block		@4°C ±0.6°C / @37°C ±0.1°C / @100°C ±0.3°C
Temperature display		2 line x 16 character LCD
Average heat up speed		5°C / min from +25°C to +100°C (HC15 block)
Average cooling speed (HC15 block)	from +100°C to +25°C @+25°C to +4°C	5°C / min (~ 15 mins) 1.8°C / min (~ 8 mins)
Capacity	microtubes	see accessories below
Capacity	microplates	1
Shaking speed	rpm	250 to 1400
Orbit diameter	mm	2
Timer (with auto-off and audible alarm)		1 min to 96 hours (1 min increment)
Heating / cooling power	W	60
Input voltage	V dc	12
Input current	A	4.16
External power supply	V	100-240
Maximum noise	dba	53.8

### Accessories

**HC18** interchangeable block for  
20 x 0.5 ml microtubes plus  
12 x 1.5 ml microtubes



●

**HC24N** interchangeable block for  
24 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)



●

Note: PCMT unit supplied without a block, please order from above.

## Thermoshakers » PHMT thermoshaker for microtubes and microplates

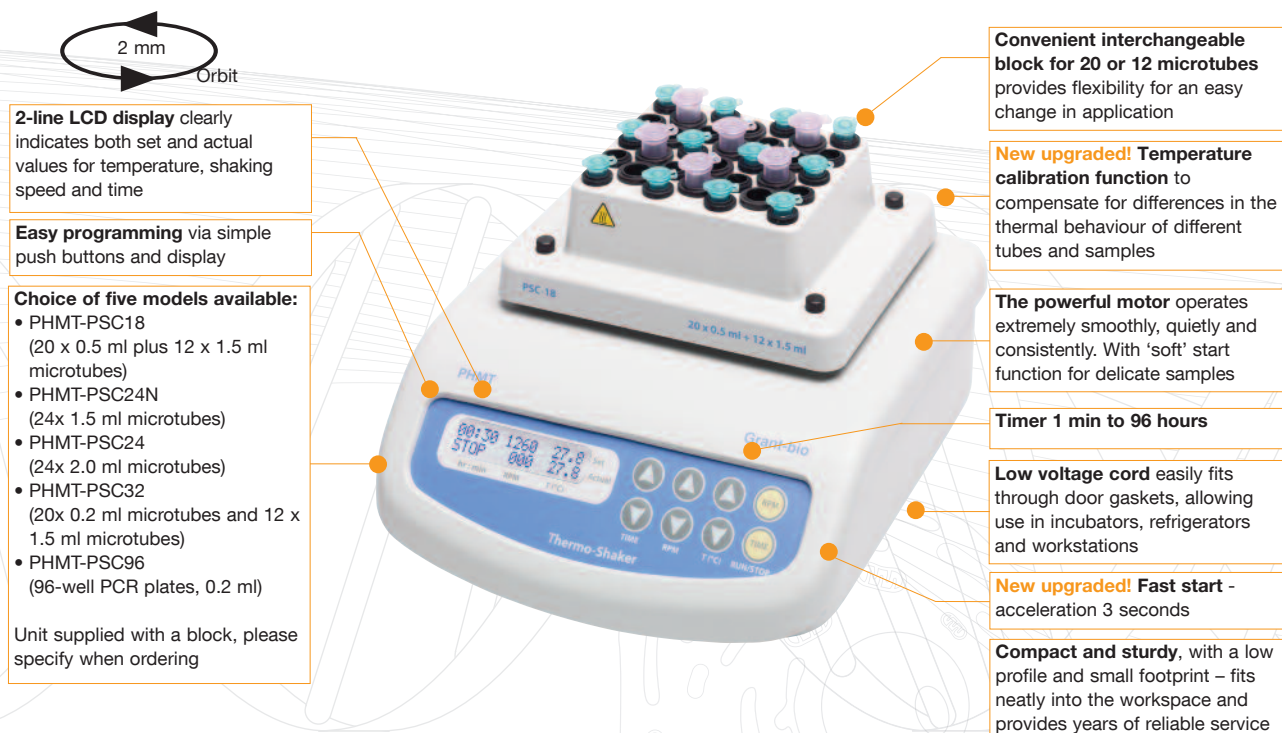
# PHMT - thermoshaker for microtubes and PCR plates

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

- a microtube and microplate thermoshaker
- a compact benchtop incubator
- a microtube and microplate shaker in cold or ambient temperatures

- **Capacity for up to 24 or up to 32 microtubes or PCR 96 well plate**
- **Temperature setting range: +25°C to 100°C**
- **Temperature control range: +5°C above ambient to 100°C**
- **Shaking speed: 250 to 1400 rpm**
- **Rapid heat-up speed**
- **Continuous or timed operation, with alarm and automatic switch-off facility**
- **Improved fast start 3s to maximum shaking speed**
- **Temperature calibration function**

Model PHMT-PSC18 shown








- Applications:**
- Life-science - genetic analyses, extraction of DNA, RNA and further sample preparation, biochemical studies of enzymatic reactions and processes, extraction of metabolites from cellular material, incubation, agitation, digestion of samples/standards for peptide mapping



## Thermoshakers » PHMT » Models and specifications

### Thermoshakers – models and specifications

● = option

	For microtubes				For microplates
	PHMT-PSC18	PHMT-PSC24N	PHMT-PSC24	PHMT-PSC32	PHMT-PSC96
					
	4 kg h: 130 mm d: 230 mm w: 205 mm	4 kg h: 130 mm d: 230 mm w: 205 mm	4 kg h: 130 mm d: 230 mm w: 205 mm	4 kg h: 130 mm d: 230 mm w: 205 mm	4 kg h: 130 mm d: 230 mm w: 205 mm
Temperature setting range °C	+ 25 to 100				
Temperature control range	+5°C above ambient to 100°C				
Temperature uniformity over the block	@ +37°C ±0.1°C @ +60°C ±0.2°C @ +100°C ±0.2°C				
Display	2 line x 16 character LCD				
Heat up speed RT to 100°C	4°C/min				
Capacity	32 microtubes 20 x 0.5 ml and 12 x 1.5 ml	24 x 1.5 ml microtubes	24 x 2.0 ml microtubes	32 microtubes 20 x 0.2 ml and 12 x 1.5 ml	96-well PCR plate
Shaking speed rpm	250 to 1400				
Orbit diameter mm	2				
Timer	1 min to 96 hours (1min increment)				
Weight kg	4				
Input voltage V dc	12				
Input current A	4.16				
External power supply V	100-240				
Heating power W	42				
Maximum noise dBA	54.7				

### Accessories

<b>PSC18 additional / spare block</b> 20 x 0.5 ml microtubes plus 12 x 1.5 ml microtubes	●
<b>PSC24N additional / spare block</b> 24 x 1.5 ml microtubes	●
<b>PSC24 additional / spare block</b> 24 x 2.0 ml microtubes	●
<b>PSC32 additional / spare block</b> 20 x 0.2 ml microtubes plus 12 x 1.5 ml microtubes	●
<b>PSC96 additional / spare block</b> 96-well microplates (0.2 ml)	●

## Thermoshakers » PHMP and PHMP-4 thermoshaker for microplates

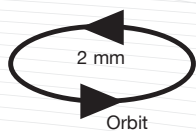
### Thermoshaker PHMP and PHMP-4 for microplates

Excellent temperature uniformity across the platform/microplate (patented bi-directional heating of microplates) 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 in cold or ambient temperatures

- **Temperature setting range: +25°C 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**
- **Patented dual heating of microplates**



The heated lid completely covers the heating platform to provide bi-directional heating (patented) 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 door gaskets, allowing use in incubators, refrigerators and workstations

- Applications:**
- Cytochemistry - for in situ reactions
  - Biochemistry - for enzyme and protein analysis, incubation for biomarker and protein binding assays
  - Immunochemistry - for immunofluorescence reaction, ELISA incubation
  - Molecular biology (for microbial cell cultivation and DNA analysis)

## Thermoshakers » PHMP and PHMP-4 » Models and specifications

Thermoshakers – models and specifications		
● = option	2-plate thermoshaker	4-plate thermoshaker
	PHMP	PHMP-4
		
	h: 125 mm d: 250 mm w: 265 mm weight: 7kg	h: 140 mm d: 390 mm w: 380 mm weight: 9kg
Temperature setting range	°C +25 to 60	
Temperature control range	ambient +5°C to 60°C	
Temperature uniformity @ 37°C	±0.25	
Temperature stability	°C ±0.1	
Temperature display	2 line x 16 character LCD	
Average heat up speed	from 25°C to 37°C: 12 mins from 37°C to 60°C: 35 mins	
Capacity	microplates: 2	4
Shaking speed	rpm: 250 to 1200	
Speed setting resolution	rpm: 10	
Orbit diameter	mm: 2	
Timer (with auto-off and audible alarm)	1 min to 96 hours (1 min increment)	
Max. height of microplates	mm: 18	
Weight	kg: 6	9
Input voltage	V dc: 12	
Input current	A: 3.3	4.15
External power supply	V: 100-240	