

# 10 Thermoshakers



## **Thermoshaker with cooling**

PCMT for microplates and microtubes

## **Thermoshaker**

PHMT for microplates and microtubes

## **Thermoshaker for microplates**

PHMP and PHMP-4 for 2 or 4 microplates

## **Thermoshaker for deep well plates**

TS-DW for 1 deep well plate

## 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
- Thermoshaker for microtubes, microplates and PCR plates - PHMT
- Thermoshakers for microplates and PCR plates - PHMP
- Thermoshaker for deep well plates - TS-DW



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



**PHMT** thermoshaker for microtubes and microplates.



**PHMP** thermoshaker for two microplates.



**TS-DW** deep well plate thermoshaker.



**PHMP-4** thermoshaker for four 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 1400rpm**
- **Temperature stability: ±0.1°C**
- **Improved fast start 3s to maximum shaking speed**
- **Temperature calibration function**



**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 » PCMT » Technical specifications and accessories

## PCMT– Technical specifications

• = optional

## Microplate and microtube thermoshaker

## PCMT



h: 130mm  
d: 230mm  
w: 205mm  
weight: 3.7kg

Temperature setting range	°C	+4 to 100
Temperature control range	°C	15 below ambient to +100
Temperature uniformity over the block	±°C	4°C: 0.6 37°C: 0.1 100°C: 0.3
Temperature display		2 line x 16 character LCD
Average heat up speed	°C	5 mins from +25 to +100 (HC15 block)
Average cooling speed (HC15 block) from +100°C to +25°C @+25°C to +4°C		5°C/min (~15mins) 1.8°C/min (~8mins)
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
External Power Supply		Input AC 120-230V, 50/60Hz Output DC 12V
Input voltage	V dc	12
Power consumption	W	60 (4.9A)
Maximum noise	dba	53.8

## Accessories

<b>HC18</b> interchangeable block for 20 x 0.5ml microtubes plus 12 x 1.5ml microtubes		•
<b>HC24N</b> interchangeable block for 24 x 1.5ml microtubes		•
<b>HC24</b> interchangeable block for 24 x 2.0ml microtubes		•
<b>HC32</b> interchangeable block for 20 x 0.2ml microtubes plus 12 x 1.5ml microtubes		•
<b>HC96</b> interchangeable block for 96-well microplates (0.2ml)		•

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

## 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 1400rpm
- Rapid heat-up speed
- Continuous or timed operation, with alarm and automatic switch-off facility
- Improved fast start: 3 seconds to maximum shaking speed
- Temperature calibration function



Model PHMT-PSC18 shown

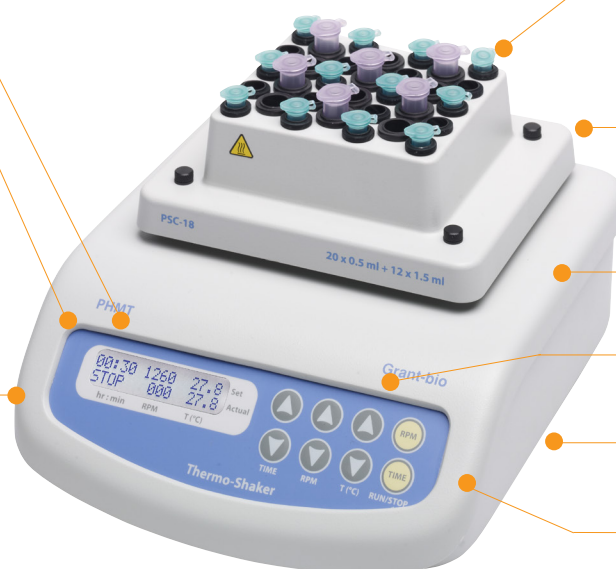
**2-line LCD display** clearly indicates both set and actual values for temperature, shaking speed and time.

**Easy programming** via simple push buttons and display.

**Choice of five models available:**

- **PHMT-PSC18**  
(20 x 0.5ml plus 12 x 1.5ml microtubes)
- **PHMT-PSC24N**  
(24x 1.5ml microtubes)
- **PHMT-PSC24**  
(24x 2.0 ml microtubes)
- **PHMT-PSC32**  
(20x 0.2ml microtubes and 12 x 1.5ml microtubes)
- **PHMT-PSC96**  
(96-well PCR plates, 0.2ml)

Unit supplied with a block, please specify when ordering.



**Convenient interchangeable block** for 20 or 12 microtubes provides flexibility for an easy change in application.

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

**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 door gaskets, allowing use in incubators, refrigerators and workstations.

**Fast start** - acceleration 3 seconds.

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






### 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 » Technical specifications and accessories

## PHMT – Technical specifications

● = optional

	For microtubes				For microplates
	PHMT-PSC18	PHMT-PSC24N	PHMT-PSC24	PHMT-PSC32	PHMT-PSC96
					
	h: 130mm d: 230mm w: 205mm weight: 3.2kg	h: 130mm d: 230mm w: 205mm weight: 3.2kg	h: 130mm d: 230mm w: 205mm weight: 3.2kg	h: 130mm d: 230mm w: 205mm weight: 3.2kg	h: 130mm d: 230mm w: 205mm weight: 3.2kg
Temperature setting range	°C +25 to 100				
Temperature control range	°C +5 above ambient to 100				
Temperature uniformity over the block	±°C @ +37°C 0.1 @ +60°C 0.2 @ +100°C 0.2				
Display	2 line x 16 character LCD				
Heat up speed to 100°C	4°C per min				
Capacity	ml 32 microtubes 20 x 0.5 & 12 x 1.5	24 x 1.5 microtubes	24 x 2.0 microtubes	32 microtubes 20 x 0.2 & 12 x 1.5	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				
External power supply	Input AC 120-230V, 50/60Hz Output DC 12V				
Input voltage	V dc 12				
Power Consumption	W 42 (3.5A)				
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)		●

## TS-DW - deep well plate thermoshaker

A thermoshaker designed for shaking and heating of deep well plates. A multisystem principle, used in the design of the thermoshaker, allows it to operate as 3 independent devices:

- Incubator
- Plate shaker
- Thermoshaker

- **Profiled platform for perfect plate fit and maximum heat transfer**
- **Temperature setting range: +25°C to 100°C**
- **Temperature control range: +5°C above ambient to 100°C**
- **Shaking speed: 250 to 1400rpm**
- **Rapid heat-up speed**
- **Very small footprint**



**Heated lid supplied as standard.**  
Provides reduced condensation, meaning excellent temperature stability of  $\pm 0.1^\circ\text{C}$ .

**Choice of 4 interchangeable profiled blocks** for specific deep well plates\*.

**2-line LCD display** clearly indicates both set and actual values.

**Programmable with digital timer.**

**Very small footprint** saving bench space.

\* Must be ordered separately. Custom platform may be available with a sample

### Applications:

- Life science applications, molecular biology, cell biology lab, cell lysis, DNA isolation and purification, sample preparation for PCR, pellet re-suspension, or any other method where you have many samples that need mixing in deep well plates

## TS-DW deep well plate thermoshaker – Technical specifications

● = optional

## TS-DW

## Deep well plate thermoshaker



h: 130mm  
d: 230mm  
w: 205mm  
weight: 5.1kg

Mixing speed control range	rpm	250 to 1400
Temperature control range	°C	Ambient +5 to 100
Temperature setting range	°C	+25 to 100
Orbit ø	mm	2
Temperature uniformity	±°C	0.1
Temperature accuracy	±°C	0.5
Timer with sound alarm		1 min to 96 hrs
Heated lid		yes
Capacity		1 deep well plate, Eppendorf®, Sarstedt®, Axygen®, Starlab®, custom*
External power supply		Input AC 120-230V, 50/60Hz Output DC 12V
Input voltage	V dc	12
Power consumption	W	58 (4.8A)

\* Must be ordered separately. Custom fit may be possible with sample.

## Accessories

<b>B-2A</b> Block for one deep well plate Axygen® 96/2200 µl	●
<b>B-2E</b> Block for one deep-well plate Eppendorf® 96/1000 µl	●
<b>B-2S</b> Block for one deep well plate Sarstedt® Megablock 96/2200 µl	●
<b>B-2SL</b> Block for one deep well plate Starlab® 96/1200 µl	●



Thermoshakers » PHMP, PHMP-100 and PHMP-4 thermoshaker for microplates

## PHMP, PHMP-100 and PHMP-4 thermoshaker 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 devices 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 100°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 three models with capacity for two or four microplates**
- **Patented dual heating of microplates**
- **Temperature calibration function**



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.

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.






### 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, PHMP-100 and PHMP-4 » Technical specifications

## PHMP, PHMP-100 and PHMP-4 – Technical specifications

	2-plate thermoshaker		4-plate thermoshaker
	PHMP	PHMP-100	PHMP-4
	 <p>h: 125mm d: 250mm w: 265mm weight: 6.1kg</p>	 <p>h: 125mm d: 260mm w: 270mm weight: 5.9kg</p>	 <p>h: 140mm d: 390mm w: 380mm weight: 8.8kg</p>
Temperature setting range	°C	+25 to 60	+25 to 100
Temperature control range	°C	ambient +5 to 60	ambient +5 to 100
Temperature uniformity @ 37°C	±°C	0.25	
Temperature stability	±°C	0.1	
Temperature display		2 line x 16 character LCD	
Average heat up speed	°C	12 minutes from 25 to 37 35 minutes from 25 to 60 60 minutes from 25 to 100 (PHMP-100 only)	
Capacity		2 microplates	4 microplates
Shaking speed	rpm	250 to 1200	
Speed setting resolution	rpm	increment 10	
Orbit diameter	mm	2	
Timer (with auto-off and audible alarm)		1 min to 96 hrs (1 min increment)	
Max. height of microplates	mm	18	
External power supply		Input AC 120-230V, 50/60Hz Output DC 12V	
Input voltage	V dc	12	
Power consumption	W	40 (3.3A)	50 (4.15A)