



Thermoshakers

Thermoshaker with cooling
PCMT for microplates and microtubes

Thermoshaker
PHMT for microplates and microtubes

Thermoshaker for microplates
PHMP and PHMP-4 for two or four
PHMP-100 microplates

**Thermoshaker for deep
well plates**
TS-DW for one deep well plate

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, efficiency and throughput are increased.

Thermoshaker with cooling – for microtubes and PCR plates – PCMT

Thermoshaker – for microtubes and PCR plates – PHMT

Thermoshaker – for microplates – PHMP

Thermoshaker – for deep well plates – TS-DW



PCMT



TS-DW



PHMT



PHMP



PHMP-100



PHMP-4



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PCMT

Thermoshaker with cooling

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

A multi-use 3 in 1 device with simultaneous or independent heating/cooling and mixing functions.

- Microtube and PCR plate thermoshaker
- Compact benchtop incubator
- Microtube and PCR plate shaker

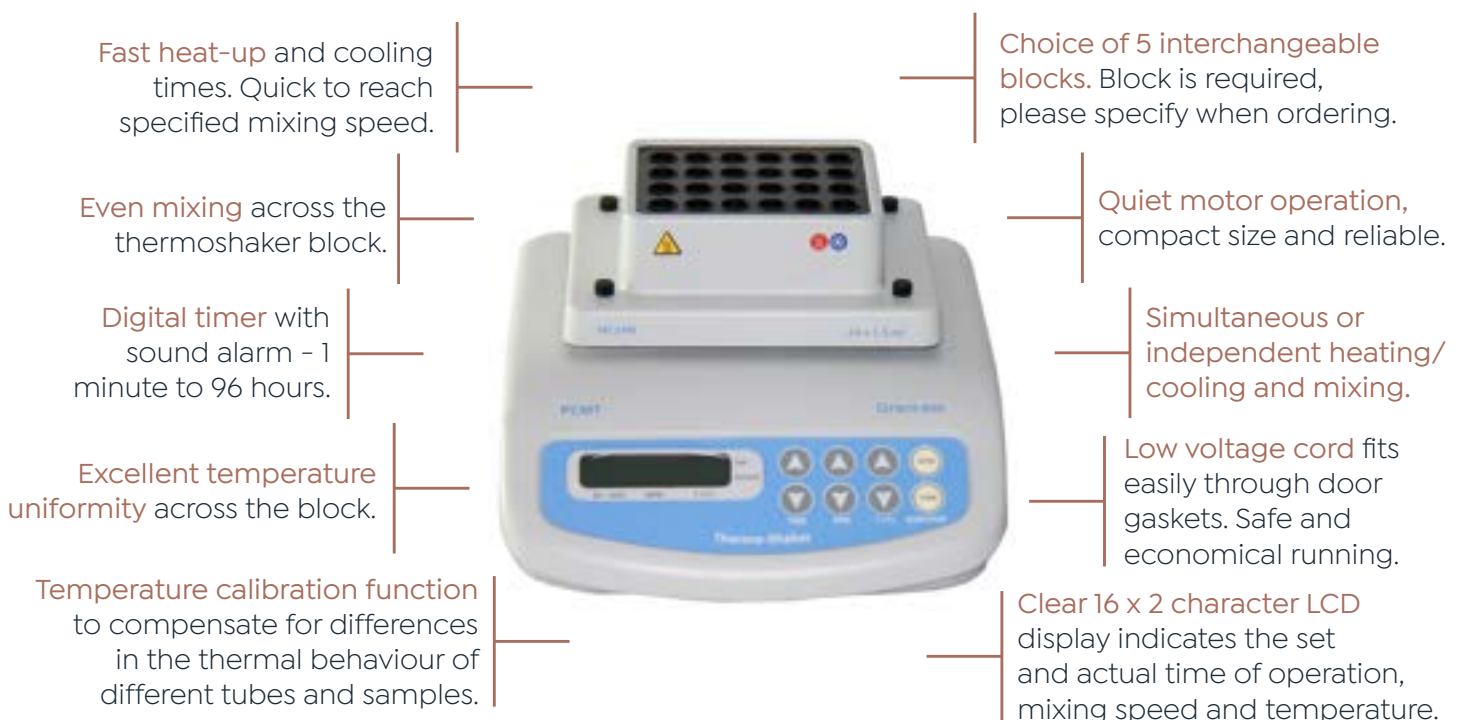
Ambient temperature setting range +4°C to 100°C

Temperature control range ambient -15°C to 100°C

Stability: $\pm 0.01^\circ\text{C}$

Shaking speed: 250 to 1400rpm

Fast start with three seconds to maximum shaking speed



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

PCMT

Technical specifications



		PCMT
		Microplate and microtube thermoshaker
Dimensions	h x d x w mm	130 x 240 x 220
Temperature setting range	°C	+4 to 100
Temperature control range	°C	15 below ambient to +100
Uniformity over block	@4°C ±°C	0.6
	@37°C ±°C	0.1
	@100°C ±°C	0.3
Heating speed (average)	°C	5°C/min from +25 to +100 (~15 minutes)
Cooling speed using HC18 block (average cooling)	100°C to 25°C*	5°C/min (~15 minutes)
	25°C to 4°C*	1.8°C/min (~12 minutes)
Shaking speed	rpm	250 to 1400
Display (temperature)		2-line x 16-character LCD
Capacity	microtubes	See accessories below
Capacity	PCR plates	1
Orbit diameter	mm	2
Timer (with auto-off and audible alarm)		1 minute to 96 hours (1-minute increment)
Maximum noise	dba	53.8
Heating/cooling power	W	60
External power supply		Input AC 100-240V, 50/60Hz Output DC 12V
Power consumption	W	60 (4.9A)
Input voltage	V dc	12
Weight	kg	3.7

PCMT

Options and accessories

HC18		Interchangeable block for: 20 x 0.5ml microtubes plus 12 x 1.5ml microtubes
HC24N		Interchangeable block for: 24 x 1.5ml microtubes
HC24		Interchangeable block for: 24 x 2.0ml microtubes
HC32		Interchangeable block for: 20 x 0.2ml microtubes plus 12 x 1.5ml microtubes
HC96		Interchangeable block for: 96-well microplates (0.2ml)

PHMT

Thermoshaker for microtubes and PCR plates

Variable speed and temperature thermoshaker combining three devices in one for maximum versatility and efficiency.

- Microtube and microplate thermoshaker
- Compact benchtop incubator
- Microtube and microplate shaker in cold or ambient temperatures

Temperature setting range +25°C to 100°C


Temperature control range +5°C above ambient to 100°C

Shaking speed: 250 to 1400rpm

Capacity for up to 24 or up to 32 mixed sized microtubes or PCR 96-well plate

Fast start with three seconds to maximum shaking speed

Mixing and incubation phases are combined reducing reactions process times



Compact and sturdy with a low profile and small footprint - fits neatly into the workspace.

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

Timer 1 minute to 96 hours.

Easy programming via simple push buttons and display.

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 a 'soft' start function for delicate samples.

Choice of 5 models available. Unit supplied with block, please specify when ordering.

Low voltage cord fits easily through door gaskets. Safe and economical running.

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

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

PHMT

Technical specifications



		PHMT-PSC18	PHMT-PSC24N	PHMT-PSC24	PHMT-PSC32	PHMT-PSC96
		For microtubes			For microplates	
Dimensions	h x d x w mm	130 x 240 x 220				
Temperature range	°C	+ 25 to 100				
Temperature control range	°C	+ 5 ambient to 100				
Uniformity over block	@+37°C ±°C	0.1				
	@+60°C ±°C	0.2				
	@+100°C ±°C	0.2				
Shaking speed	rpm	250 to 1400 (increments 10 rpm)				
Heat up speed to 100°C		4°C per minute				
Display (temperature)		2-line x 16-character LCD				
Capacity	microtubes	20 x 0.5ml & 12 x 1.5ml	24 x 1.5ml	24 x 2.0ml	20 x 0.2ml & 12 x 1.5ml	-
Capacity	PCR plates	-				96 well PCR plate
Orbit diameter	mm	2				
Timer		1 minute to 96 hours (1-minute increment)				
Maximum noise	dba	54.7				
Heating power	W	42				
External power supply		Input AC 100-240V, 50/60Hz Output DC 12V				
Power consumption	W	42 (3.5A)				
Input voltage	V dc	12				
Weight	kg	3.2				
Weight (with block)	kg	4				

PCMT

Options and accessories

PSC18		Additional/spare block: 20 x 0.5ml microtubes plus 12 x 1.5ml microtubes
PSC24N		Additional/spare block: 24 x 1.5ml microtubes
PSC24		Additional/spare block: 24 x 2.0ml microtubes
PSC32		Additional/spare block: 20 x 0.2ml microtubes plus 12 x 1.5ml microtubes
PSC96		Additional/spare block: 96-well PCR plate.

TS-DW

Deep well plate thermoshaker

A thermoshaker designed for shaking and heating of deep well plates. Operates as three independent devices.

- Incubator
- Plate shaker
- Thermoshaker

Temperature setting range +25°C to 100°C

Temperature control range ambient +5°C to 100°C

Shaking speed: 250 to 1400rpm

Profiled platform to fit perfectly with your block, allowing maximum heat transfer

Space saving

Mixing and incubation are combined to reduce reaction process times



* Note: 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

Technical specifications



		TS-DW
		Deep well plate thermoshaker
Dimensions	h x d x w mm	130 x 260 x 240
Temperature range	°C	+25 to 100
Temperature control range	°C	Ambient +5 to 100
Uniformity @ 37°C	±°C	0.1
Temperature accuracy	@ 37°C ±°C	0.5
Platform heat-up speed from 25°C to 37°C		6 minutes (For B-2E block)
Mixing speed control range	rpm	250 to 1400
Heated lid		Yes
Capacity		1 deep well plate, Eppendorf®, Sarstedt®, Axygen®, Starlab®, Custom*
Orbit diameter	mm	2
Timer (with sound alarm)		1 minute to 96 hours
External power supply		Input AC 100-240V, 50/60Hz Output DC 12V
Power consumption	W	58 (4.8A)
Input voltage	V dc	12
Weight	kg	5.1

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

TS-DW

Options and accessories

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

PHMP series

Thermoshaker for microplates

Excellent temperature uniformity across the platform/microplate. Combined with variable speed and variable temperature produces the ideal thermoshaker for multi-use, 1-4 microplate incubations.

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

- Microplate thermoshaker
- Compact benchtop incubator without shaking
- Microplate shaker in cold or ambient temperatures

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

Display of both **set and actual temperature** and shaking speed.

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



Product highlights

- Temperature setting range +25°C to 100°C
- Stability: $\pm 0.1^\circ\text{C}$
- Bi-directional heating system (platform and lid)
- Shaking speed: 250 to 1200rpm
- Rapid heat-up speed
- Continuous or timed operation, with alarm buzzer and automatic switch-off facility
- Choice of three models with capacity for two or four microplates
- Temperature calibration function



Soft start/stop protects samples.

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 proteinbinding assays
- Immunochemistry - for immunofermentative reaction, ELISA incubation
- Molecular biology (for microbial cell cultivation and DNA analysis)

PHMP series

Technical specifications



		PHMP	PHMP-100	PHMP-4
		2-plate thermoshaker	2-plate thermoshaker	4-plate thermoshaker
Dimensions	h x d x w mm	125 x 260 x 270		140 x 390 x 380
Temperature setting range	°C	+25 to 60	+25 to 100	+25 to 60
Temperature control range	°C	Ambient +5 to 60	Ambient +5 to 100	Ambient +5 to 60
Stability	±°C	0.1		
Uniformity	@+37°C ±°C	0.25	0.2	0.25
Display		2-line x 16-character LCD		
Shaking speed	rpm	250 to 1200		
Speed setting resolution	rpm	Increment 10		
Average heat up speed	°C	12 minutes from 25 to 37 35 minutes from 37 to 60 60 minutes from 25 to 100 (PHMP-100 ONLY)		
Maximum height of microplates	mm	18		
Capacity		2 microplates	4 microplates	
Orbit diameter	mm	2		
Timer (with auto-off and audible alarm)		1 minute to 96 hours / non-stop (1-minute increment)		
External power supply		Input AC 100-240V, 50/60Hz Output DC 12V		
Power consumption	W	40 (3.3A)	60 (5A)	50 (4.15A)
Input voltage	V dc	12		
Weight	kg	6.1	5.9	8.8

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