

Grant PHMP Microplate Thermoshaker



Product Overview

Microplate thermoshaker for use with standard depth 96- and 384-well plates. Temperature range ambient + 5 to 60°C, shaking speed 300 to 1200rpm, integral timer. Features heated lid for excellent stability and uniformity and minimisation of condensation.

Product Features

- variable speed, variable temperature microplate thermoshaker
- variable speed: 250 to 1200 rpm
- 2mm shaking orbit for effective mixing
- soft start
- temperature range: ambient + 5 to 60°C
- timed operation: 1 minute to 96 hours with buzzer and automatic switch-off
- accommodates 2 standard depth 96- or 384-well plates
- low voltage power supply enables safe cold room operation
- operating ambient temperature range 4°C to 45°C, for use in a cold room or incubator

Product Applications

- molecular biology - for bacterial cultivation and DNA analysis
- cytochemistry - for in situ reactions
- biochemistry - for enzyme and protein analysis
- molecular chemistry - for matrix analysis
- immunochemistry
- molecular diagnostics
- Elisas

Product Specifications

			PHMP
Temperature range		°C	ambient +5 to 60
Stability		°C	±0.1
Uniformity		°C	±0.2
Shaking speed		rpm	250 to 1200
Speed setting resolution		rpm	10
Orbit		mm	2
Timer			1 min to 96 hrs
Time setting resolution		mins	1
Heat-up time, ambient to 37°C		mins	15 to 20
Overall dimensions	w/d/h	mm	265/250/125
Ambient temperature range		°C	4 to 45
Input voltage		V	12
Input type			dc
Input current		A	5

PHMP-4 microplate shaker incubator

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The Grant bio PHMP-4 is a variable speed, variable temperature microplate shaker incubator designed for use with all types of standard depth 96- and 384-well plates. Excellent temperature uniformity across the microplate is guaranteed by the heated lid and base which completely cover the plate producing a controlled micro-environment. This is combined with powerful orbital shaking to produce the maximum yield from your incubations.

Comprising three instruments in one, the PHMP-4 is highly versatile in application as a:

- microplate shaker incubator
- compact benchtop incubator, without shaking
- microplate shaker, without temperature control, for operation in a coldroom

Good temperature transfer to samples within the wells of microplates is inherently difficult to achieve as the point of contact between the microplate well and a flat heating plate is very small. Our solution lies in the heated lid and base providing bi-directional heating.

Considerable advantages result from this design including:

- excellent temperature stability
- excellent temperature uniformity across the plates for optimum consistency of results, independent of room temperature
- prevention of condensation which is crucial when handling micro-volume samples, particularly at high temperatures

The Grant bio PHMP-4 microplate shaker incubator is compact, with a low profile and small footprint. It is also extremely quiet. The powerful motor produces regulated and reproducible rotation throughout the speed range and, combined with the sturdy construction, will guarantee years of consistent operation.

The PHMP-4 is extremely easy to operate, with very simple set-up of temperature, speed and time, using the two line set-up and status display (actual and set points are displayed).

Features include:

- variable speed: 250 to 1200 rpm
- 2mm shaking orbit for effective mixing
- soft-gradual start/stop
- temperature range: ambient +5 to 60°C (+5 to 100°C by special order)
- timed operation: 1 minute to 96 hours with automatic switch-off and alerting buzzer
- accommodates standard depth multi-well plates
- low voltage power supply enables safe cold room operation
- operating ambient temperature range 4°C to 45°C, for use in a cold room or incubator



Applications

Suitable for applications in many fields, including:

- molecular biology - for microbial, cell cultivation and DNA analysis
- cytochemistry - for in situ reactions
- biochemistry - for enzyme and protein analysis
- molecular chemistry - for matrix analysis
- immunochemistry
- molecular diagnostics
- ELISAs

PHMP4 Specification

temperature range	ambient +5 to 60°C*
stability	±0.1°C
uniformity	±0.2°C
shaking speed	250 to 1200rpm
speed setting resolution	10rpm
orbit	2mm
timer	1 min to 96 hrs
time setting resolution	1 min
heat-up time (room temp to 37°C)	15 to 20 mins
Overall dimensions	380 x 390 x 140mm
ambient temperature range	4 to 45°C
input voltage	12V
input type	dc
input current	5A
External power supply	AC/DC 12V, 4.16 A

*100°C version available as a special order. Please contact Grant for details.

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Grant bio products

- meet the requirements of IEC61010 parts 1 and 2
- bear the CE mark to indicate that they meet the requirements of the Low Voltage and EMC Directives

Grant Instruments (Cambridge) Ltd operates an approved Quality Management System which complies with the requirements of BS EN ISO 9001:2000 for the activities detailed in the scope of registration. Certificate No. FM 24301.

Repairs are normally carried out within three to five working days of arrival at our factory or receipt of authorisation to repair. Alternatively, spare parts and service manuals can be despatched within two working days. Most overseas distributors offer a rapid and effective after-sales service, with spare parts held in stock.

Grant bio products are guaranteed for two years against faulty materials and workmanship. For repairs carried out under guarantee, no charge is made for labour or materials.

We are committed to a continuous programme of improvement, and specifications may be changed without notice.

Grant Block Heater PHMT Microtube Thermoshaker



Product Overview

The Grant-bio PHMT is a compact benchtop shaking incubator, ideal for all applications requiring heating and shaking in microcentrifuge tubes, within the temperature range of ambient + 5 to 100°C. Combining the mixing operation with the incubation phase produces multiple benefits: reaction process times are reduced; the operator's workload is reduced; the efficiency of many procedures, for example the transformation of bacterial cells, is increased.

PHMT provides ideal heat conditions for your samples. The ingenious block construction, combined with the powerful heating, produces very rapid heating for swift change of application, increased flexibility and increased throughput.

A choice of alternative blocks is available, to meet the needs of many standard laboratory procedures:

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

Comprising three instruments in one, the PHMT is highly versatile in application:

- microtube thermoshaker
- compact benchtop incubator, without shaking
- microtube shaker without temperature control, also suitable for coldroom operation

The Grant-bio PHMT microtube thermoshaker is compact, with a low profile and small footprint.

The quiet motor produces regulated and reproducible rotation throughout the speed range, with uniform amplitude throughout the shaking platform. Shaking may be configured for continuous or timed operation.

The PHMT is extremely easy to operate, with very straightforward set-up of temperature, speed and time, using the two line set-up and status display, which clearly indicates both set and actual values for each of the three parameters.

- variable speed, variable temperature microtube thermoshaker
- variable speed: 250 to 1400 rpm for gentle to vigorous mixing
- 2mm shaking orbit for effective mixing
- soft start
- temperature range: ambient + 5 to 100°C
- timed shaking operation: 1 minute to 96 hours with buzzer and automatic switch-off
- low voltage power supply enables safe cold room operation
- operating ambient temperature range 4°C to 45°C, for use in a cold room or incubator

Product Specifications

			PHMT
Temperature range		°C	ambient +5 to 100
Stability	@37°C	°C	0.1
Uniformity	@37°C	°C	0.1
Shaking speed		rpm	250 to 1400
Shaking speed resolution		rpm	10
Orbit		mm	2
Timer			1 min to 96 hrs
Timer setting resolution		mins	1
Heat-up rate	RT to 100°C	°C/min	>6
Overall dimensions	w/d/h	mm	205/230/130
Ambient temperature range		°C	4 to 45
Input voltage		V	12
Input type			dc
Input current		A	0.5

Product Applications

Suitable for applications in many fields, including;

- immunochemistry
- biochemistry – for enzyme analysis

Product Accessories

One of the following interchangeable microtube blocks is required:

- PSC-20 for 20 x 1.5ml microtubes
- PSC-18 for 20 x 0.5ml plus 12 x 1.5ml microtubes