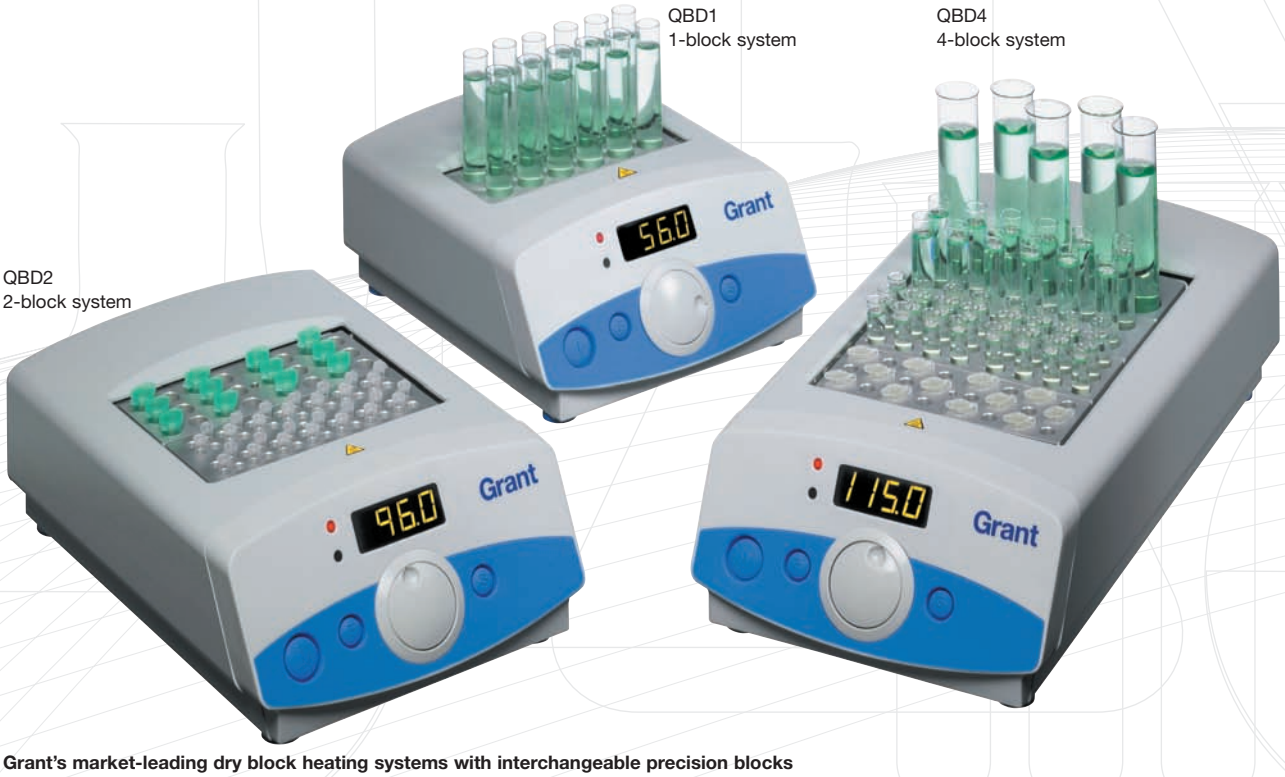
1 Dry block heating systems

Dry block heating systems

QB and BT series

Market-leading dry block heating systems combining superb temperature control and uniformity with high quality design and great versatility. A premium product range at an affordable price.

- **Accurate, reproducible, rapid and safe heating of your samples** – due to advanced temperature control combined with high quality, precision-engineered blocks providing excellent thermal contact
- **Choice of models with interchangeable blocks or with fixed microtube blocks**
- **Versatile range of interchangeable heating blocks to fit any sample tube or plate** – from our standard range of blocks, or custom-made blocks to suit your application
- **Full range of models and options to cater for basic through to more sophisticated applications**



Grant's market-leading dry block heating systems with interchangeable precision blocks

Applications

Grant dry block heating systems provide a source of precision temperature control for general, routine applications and sensitive analytical procedures including enzyme digestions, enzyme activity studies and nucleic acid hybridisations.

For combined dry block heating and cooling systems, see p. 2.1.

Ideally tubes should not be filled higher than edge of block.

showcase – **mid range/general purpose** example

Model QBD2* stability and uniformity ± 0.1°C, range ambient + 5 to 130°C

A versatile general purpose system with two removable/interchangeable blocks and a comprehensive specification to suit most dry block heating applications in the laboratory.

- **Stability and uniformity ± 0.1°C**
- **Digital temperature control for optimum precision**
- **Heating range ambient + 5° to 130°C, with rapid heat-up time**
- **Range of convenient features including alarms, two-point and one-point calibration, programmed start/stop, 'offset' for known sample temperature variation and choice of external or internal probe**
- **External probe for accurate temperature control in a tube**

Microplate or microtube blocks for 0.2 ml tubes, strips and 96-well microtitre plates used in molecular biology and biotechnology applications

Wide range of interchangeable blocks – extraction tool supplied as standard for easy and safe removal of blocks

Custom blocks – for any tube or vessel

High power heater for fast heat-up – from 25° to 100°C in only 15 minutes

Overtemperature cut-out protects your samples and your workplace

Optional safety cover – protects samples from contamination and users from accidental contact with hot blocks

Convenient timer facility, with audible buzzer, for reaction timing and function timing, e.g. delayed heater switch-on/turn-off

Simple-to-use rotor plus two keys provide access to the interactive interface for fast, accurate set-up

Compact footprint and sloping fascia optimise benchspace and ensure clear visibility during set-up and in use

High quality, robust construction in streamlined coolwall aluminium and chemical-resistant plastic – durable in demanding environments

* see summary table on pp. 1.4–1.5 for accessories and for other models in the range

showcase – dry block heater for microtubes

Model BTD* stability and uniformity ± 0.1°C, range ambient + 5 to 100°C

A compact and flexible fixed block system for rapid and precise heating of microtubes up to 100°C.

- **Stability and uniformity ± 0.1°C**
- **Digital temperature control for optimum precision**
- **Heating range ambient + 5° to 100°C, with rapid heat-up time**
- **Capacity for up to 49 microtubes in a combination of four common sizes**
- **Integral timer**

Heating block holds combinations of four microtube sizes simultaneously – up to a total of 49 tubes:
- 24 x 1.5/2.0 ml
- 15 x 0.5 ml
- 10 x 0.2 ml

Powerful heater for rapid heat-up times
- 25° to 100°C in just 16 minutes
- 25° to 37°C in just 2½ minutes

2-line display for simple and precise setting of temperature/time showing actual and preset values

Convenient integral timer for time-sensitive incubations

Sturdy, durable, easy-to-clean plastic outer case; compact design with small footprint

* see p. 1.6 for a detailed specification and other models in the range

Dry block heating systems with interchangeable blocks – models

Temperature range
- ambient + 5 to 130°C
- ambient + 5 to 200°C
- ambient + 5 to 100°C

● = standard

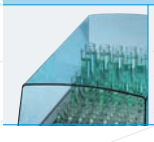
	Precision digital			High performance digital	Economy analogue	
	QBD1	QBD2	QBD4	QBH2	QBA1	QBA2
	1-block system	2-block system	4-block system	2-block system	1-block system	2-block system
	 h: 100 mm d: 230 mm w: 200 mm	 h: 100 mm d: 280 mm w: 200 mm	 h: 100 mm d: 380 mm w: 200 mm	 h: 100 mm d: 280 mm w: 200 mm	 h: 100 mm d: 230 mm w: 200 mm	 h: 100 mm d: 280 mm w: 200 mm

Specification

Temperature range	°C	ambient + 5 to 130			ambient + 5 to 200	ambient + 5 to 100	
Temperature setting range	°C	15 to 130			15 to 200	0 to 100	
Setting resolution	°C	0.1			0.1	2	
Stability	@ 37°C, °C	± 0.1			± 0.1	± 1.0	
Uniformity							
within the block	@ 37°C, °C	± 0.1			± 0.1	± 1.0	
across similar blocks	@ 37°C, °C	± 0.2			± 0.2	± 1.0	
Temperature display, LED		●			●	–	
Display resolution	°C	0.1			0.1	–	
Heat up time	25° to 100°C mins	15			15	25	
Three programmable temperature/time segments plus end-of-program segments		–			●	–	
Reaction timer, with audible buzzer		1 min to 72 hours			1 min to 72 hours	–	
Function timer for delay of heater start-up/switch-off		up to 72 hours			up to 72 hours	–	
Off-set adjustment		●			●	–	
Two-point calibration of internal and external probes		●			●	–	
High/low temperature alarms, settable to within 0.5°C of set temperature		●			●	–	
Fault indication display		●			●	–	
Power	W	150	300	600	300	150	300
Supply voltage	V	115 or 230 (50-60 Hz)			115 or 230 (50-60 Hz)	115 or 230 (50-60 Hz)	
Safety	overtemperature cut-out	thermal fuse			thermal fuse; adjustable	thermal fuse	
Extraction tool for easy and safe block removal		●			●	●	

Options and accessories

x = not available ● = available

	QBD1	QBD2	QBD4	QBH2	QBA1	QBA2
Interchangeable blocks						
No. of blocks 140 x 50 x 63 mm	1	2	4	2	1	2
QB-0 Plain block without holes	●	●	●	●	●	●
QB-10 24 x 10 mm Ø holes, 50 mm hole depth	●	●	●	●	●	●
QB-12 24 x 12 mm Ø holes, 50mm hole depth	●	●	●	●	●	●
QB-13 12 x 13 mm Ø holes, 50 mm hole depth	●	●	●	●	●	●
QB-16 12 x 16 mm Ø holes, 50 mm hole depth	●	●	●	●	●	●
QB-18 12 x 18 mm Ø holes, 50 mm hole depth	●	●	●	●	●	●
QB-24 5 x 24 mm Ø holes and universal bottles, 50 mm hole depth	●	●	●	●	●	●
QB-50 4 x 50 ml centrifuge tubes, glass universals, 50 mm hole depth	●	●	●	●	●	●
QB-H 56 x 0.2 ml microtube, 14 mm hole depth	●	●	●	●	●	●
QB-E0 24 x 0.5 ml microtube, 30 mm hole depth	●	●	●	●	●	●
QB-E1 24 x 1.5 ml microtube, 35 mm hole depth	●	●	●	●	●	●
QB-E2 24 x 2.0 ml microtube, 35 mm hole depth	●	●	●	●	●	●
External Pt1000 temperature probe						
QBEP  Standard probe. For in-sample or in-block temperature control; encased in stainless steel sheath, Ø 3 mm x 30 mm long, with 350 mm of cable	●	●	●	●	x	x
QBEP-WM  Short-form probe. For in-sample or in-block temperature control; encased in stainless steel sheath, Ø 3 mm x 14 mm long, with 350 mm of cable	●	●	●	●	x	x
Microlitre blocks for molecular biology and biotechnology applications Double-size blocks 140 x 100 x 75 mm supplied with additional extraction tool (see Section 10.4 for more information)						
QDP-H  96 holes in microplate configuration for 0.2 ml microplates, strips or individual tubes Uniformity ± 0.3°C within tubes across the block; 6.2 mm Ø holes, 14 mm hole depth	x	●	x	●	x	●
QDP-FL  Universal block for standard 96-well plates (u-well, v-well, flat bottom, high temperature) Uniformity ± 0.5°C between wells; supplied with hinged, double layer lid to create an insulated incubation chamber	x	●	x	●	x	●
Safety covers (not required with QDP-FL microlitre blocks)						
 Made from tough clear polycarbonate for maximum visibility whilst preventing accidental touching of a hot block or contamination of samples from splashes	QBL1	QBL2	QBL4	QBL2	QBL1	QBL2

Dry block heating systems with fixed microtube blocks – models and specifications

Temperature range

ambient + 5 to 100°C

x = not available

● = standard

			Digital control	Analogue control
			BTD	BTA
			 h: 110 mm d: 230 mm w: 210 mm	 h: 105 mm d: 245 mm w: 175 mm
Stability	@ 37°C, °C		± 0.1	± 0.2
Uniformity	°C		± 0.2	
Block dimensions	mm		Ø 130 x 45	
Temperature range	°C		ambient + 5 to 100	
Temperature setting range	°C		25 to 100	20 to 100
Setting resolution	°C		0.1	0.5
Temperature display	2 line x 16 character LCD		●	x
Heat up time	25° to 100°C	mins	16	
	25° to 37°C	mins	2.5	
Timer			1 min to 96 hours	x
Power	W		200	
Supply voltage	V		115 or 230 (50-60 Hz)	
Safety	overtemperature cut-out		thermal fuse	