Optima™ Series,
Stirred Thermostatic Baths and Heating Circulators

Medical–Biological
Research & Technologies

A cost-effective range of multi-purpose systems combining Grant's legendary quality and reliability. Precise temperature control for a wide range of laboratory applications.

- Accurate and safe temperature control — for samples and users
- Intuitive programming and thoughtful design features — makes working with Grant stirred baths and circulators easy
- Robust, durable construction — for longevity, reliability and long-term low cost of ownership
- A complete range — 32 models to cover basic through to sophisticated needs, each model represents excellent value for money

Applications:

Grant stirred baths and circulators provide a source of precision heating and cooling for many routine and sensitive analytical procedures including sample incubation, calibration and quality control testing. All models from the **TC120** upwards are suitable for use as both open and closed loop circulators (i.e. remote vessel open or closed).

For more powerful heating requirements, i.e. above 200°C, contact Grant for advice.

Model selection (see page 65):

Any of the four Grant Optima™ digital thermostats can be combined with any of eight Grant tanks (five stainless steel and three plastic) to provide a choice of 32 models.

Heating Circulators Specifications on page 63 and all available accessories on page 64

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Optima™ Series, Heating Circulators Specifications

T100

TC120

TX150

TXF200

Grant Optima™ Heating Circulators Specifications		*General purpose Digital*		*Digital High Performance*	
		T100	**TC120**	**TX150**	**TXF200**
Stability (DIN 12876) @ 70°C	°C	± 0.05°C	± 0.05	± 0.01	± 0.01
Uniformity (DIN 12876) @ 70°C	°C	± 0.1	± 0.1	± 0.05	± 0.05
Setting resolution	°C	0.1	0.1	0.1 (0.01 with Labwise™)	
Display		4 digit LED		full colour QVGA TFT	
Timer function		–	1 to 9,999 mins	1 min to 99 hrs 59 mins	
No. preset temperatures		3	3	3	3
Two point re-calibration		+	+	+	+
Offset adjustment		–	–	+	+
Socket for external probe (TXPEP, TXSEP)		–	–	+	+
Communication interface		–	–	USB & RS232	USB & RS232
Programmable		–	–	remote via PC 1 program/ 30 segments	direct via user interface or remote via PC/laptop 10 programs / 100 segments
Relays		–	–	1	1
Safety	overtemperature	fixed	adjustable cut-out		
Safety	fluid level — float switch	+	+	+	+
Alarms (can be configured to switch a relay)		–	–	high and low	high and low
Heater power	230 V kW	1.3	1.3	1.9	1.9
Electrical power	230 V kW	1.4 (50–60 Hz)	1.4 (50 Hz)	2.0 (50 Hz)	2.0 (50–60 Hz)
Height above tank rim	mm	200	200	200	200
Depth below tank rim	mm	135	135	135	135
Grant Optima™ thermostat pumps (integral)					
Maximum pressure	water mbar	–	210	310	530
Maximum flow	water L/min	–	16	18	23 (adjusted flow rate)
Pipe bore	inlet/outlet mm	–	6, 11	6, 11	6, 11
Dimensions (H × D × W)	mm	315 × 145 × 115			
Catalogue numbers		**T100 EURO**	**TC120 EURO**	**TX150 EURO**	**TXF200 EURO**

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Optima™ Series, Water Bath Combinations and Accessories

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Capacity (L) **Outer tank dimensions**	• Working area (L × W) • Min/max liquid depths • Inner tank dimensions (L × W × H) • Overall dimensions incl. controller (L × W × H)	**T100** Temperature setting range	**TC120** Temperature setting range	**TX150** Temperature setting range	**TXF200** Temperature setting range
ST5 – 5 L stainless stee h: 175 mm d: 325 mm w: 175 mm *Cat.num.: STL5*	• 150 × 150 mm • 80/140 mm • 300 × 150 × 150 mm • 325 × 175 × 355 mm	**T100–ST5** amb.+15 to 100°C	**TC120–ST5** 0 to 120°C	**TX150–ST5** 0 to 150°C	**TXF200–ST5** 0 to 200°C
ST12 – 12 L stainless steel h: 175 mm d: 350 mm w: 325 mm *Cat.num.: STL12*	• 210 × 300 mm • 80/140 mm • 325 × 300 × 150 mm • 350 × 325 × 355 mm	**T100–ST12** 0 to 100°C	**TC120–ST12** 0 to 120°C	**TX150–ST12** 0 to 150°C	**TXF200–ST12** 0 to 200°C
ST18 – 18 L stainless steel h: 225 mm d: 530 mm w: 325 mm *Cat.num.: STL18*	• 390 × 300 mm • 70/30 mm • 505 × 300 × 150 mm • 530 × 325 × 405 mm	**T100–ST18** 0 to 100°C	**TC120–ST18** 0 to 120°C	**TX150–ST18** 0 to 150°C	**TXF200–ST18** 0 to 200°C
ST26 – 26 L stainless steel h: 225 mm d: 530 mm w: 325 mm *Cat.num.: STL26*	• 390 × 300 mm • 120/180 mm • 505 × 300 × 200 mm • 530 × 325 × 405 mm	**T100–ST26** 0 to 100°C	**TC120–ST26** –15 to 120°C	**TX150–ST26** –15 to 150°C	**TXF200–ST26** –15 to 200°C
ST38 – 38 L stainless steel h: 225 mm d: 730 mm w: 325 mm *Cat.num.: STL38*	• 580 × 300 mm • 120/180 mm • 690 × 300 × 200 mm • 720 × 325 × 405 mm	**T100–S38** 0 to 100°C	**TC120–S38** –15 to 120°C	**TX150–S38** –15 to 150°C	**TXF200–S38** –15 to 200°C
P5 – 5 L plastic h: 180 mm d: 240 mm w: 330 mm *Cat.num.: PL5*	• 120 × 150 mm • 80/140 mm • 240 × 160 × 150 mm • 390 × 200 × 360 mm	**T100–P5** amb.+15 to 99°C	**TC120–P5** amb.+15 to 99°C	**TX150–P5** amb.+15 to 99°C	**TXF200–P5** amb.+15 to 99°C
P12 – 12 L plastic h: 180 mm d: 415 mm w: 350 mm *Cat.num.: PL12*	• 210 × 280 mm • 80/140 mm • 325 × 280 × 150 mm • 415 × 350 × 360 mm	**T100-P12** amb.+5 to 99°C	**TC120–P12** amb.+5 to 99°C	**TX150–P12** amb.+5 to 99°C	**TXF200–P12** amb.+5 to 99°C
P18 – 18 L plastic h: 180 mm d: 600 mm w: 365 mm *Cat.num.: PL18*	• 280 × 325 mm • 80/140 mm • 510 × 290 × 150 mm • 600 × 350 × 360 mm	**T100–P18** amb.+5 to 99°C	**TC120–P18** amb.+5 to 99°C	**TX150–P18** amb.+5 to 99°C	**TXF200–P18** amb.+5 to 99°C
Options and accessories					
Labwise™ PC software (optional)					
Allows two-way communication for status display, programming and data capture (see p. 16.1 for more information)		–	–	+	+
External probes (optional)					
for monitoring and controlling temperature of remote loads FF17 flexible nylon probe, 2 m cable 100 mm × Ø 4.5 mm		–	–	+	+
LL17 stainless steel probe, 2 m cable 125 mm × Ø 5 mm		–	–	+	+
Remote switching device (optional)					
For switching appliances on and off (up to max. 8 Amps)		–	–	1	2
Vertical turbine pumps (optional)*					
Low noise, compact design. Supplied with pipe connections and special lid for fitting to tank, pipe bore 12.7 mm					
VTP 1 max. pressure 1,000 mbar max. flow 9 L/min VTP 2 max. pressure 1,650 mbar max. flow 12 L/min		+ +	Required only where application demands a higher pressure than that delivered by the internal pump to maintain flow		

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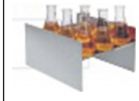
Accessories

	Lids to help reduce evaporation/ heat loss and avoid sample contamination	Rack systems* to optimise use of available bath capacity (no. of racks accommodated)	Raised shelves to allow shallow vessels to be accommodated	Accessory cooling systems to allow systems to operate at or below room temperature by means of a cooling coil dipped into the bath; designed for minimal impact on working area		
				Refrigerated immersion coolers Consist of a cooling coil connected to a refrigeration unit by a flexible pipe. Extract heat continuously, with the bath control unit controlling temperature		Heat exchange coil Designed to be attached to a supply of cooling tap water or a refrigerated circulator
				C1G (0 to 40°)	C2G (–15 to 40°C)	CW5 (2°C above coolant temperature)
ST5 – 5 L stainless steel 3 kg h: 200 mm l: 330 mm w: 180 mm 	**STL5** flat stainless steel 	**1 × QR*** 	–		–	
ST12 – 12 L stainless steel 4.5 kg h: 200 mm l: 360 mm w: 330 mm 	**STL12** gabled, hinged (removable) stainless steel 	**2 × VR*** 	**RS14** 		–	
ST18 – 18 L stainless steel 7 kg h: 200 mm l: 540 mm w: 330 mm 	**STL26** gabled, hinged (removable) stainless steel 	**4 × VR*** 	**RS22** 		–	
ST26 – 26 L stainless steel 7.5 kg h: 255 mm l: 540 mm w: 330 mm 	**STL26** gabled, hinged (removable) stainless steel 	**4 × VR*** 	**RS28** 			
ST38 – 38 L stainless steel 11 kg h: 255 mm l: 730 mm w: 330 mm 	**STL38** gabled, hinged (removable) stainless steel 	**6 × VR*** 	**RS28 or RS38** 			
P5 – 5 L plastic 2.5 kg h: 180 mm l: 240 mm w: 330 mm 	**PL5** flat, stainless steel 	**1 × QR*** 	–	–	–	–
P12 – 12 L plastic 3.5 kg h: 180 mm l: 415 mm w: 350 mm 	**PL12** curved plastic 	**2 × VR*** 	**RS14** 	–	–	–
P18 – 18 L plastic 5 kg h: 180 mm l : 600 mm w: 365 mm 	**PL18** curved plastic 	**4 × VR***	**RS22**	–		–

** — for Rack Systems description see page 56*