

Refrigerated / heating circulating baths » Optima™ refrigerated heating baths and circulators range

Optima™ refrigerated baths and circulators range

A collection of high performance refrigeration units which can be combined with any of 4 Optima™ heated circulators to deliver outstanding temperature performance for routine and sophisticated applications requiring accurate temperature control in the range of -47°C to 100°C. Grant also offer the LTC4 (TX150 - R4) which is available as a kit with the circulator, refrigeration unit and insulated tubing* to form a ready to use system.

- Choice of two base refrigeration units and four heating circulators, temperature range -47°C to 100°C (model dependent)
- Stability of up to $\pm 0.1^\circ\text{C}$
- Up to 4 years warranty
- No spill valved front drain
- Safe - water freeze protection thermostat and 27 bar high pressure switch
- 3 preset programs






3
year warranty

* Temperature range of hosing supplied: -40 to 100°C (can be cut to length as required).

Grant R series refrigeration units – models and specifications





● = standard

		R4	R5	LTC4
				
		40 kg h: 530 mm d: 490 mm w: 390 mm	47 kg h: 585 mm d: 575 mm w: 415 mm	43 kg h: 730 mm d: 490 mm w: 390 mm
Temperature range with T100 heating circulator	°C	0 - 100	0 - 100	-
Temperature range with TC120 heating circulator	°C	-20 to 100	-20 to 100	-
Temperature range with TX150 heating circulator	°C	-30 to 100	-47 to 100	-30 to 100
Temperature range with TXF200 heating circulator	°C	-30 to 100	-47 to 100	-
Refrigerant		R134a	R404a	R134a
Capacity	L	20	12	20
Cooling power	@ 20°C	900	1100	900
	@ 0°C	500	1050	500
	@ -10°C	300	800	300
	@ -20°C	180	580	180
	@ -30°C	40	370	40
	@ -40°C	-	130	-
	@ -47°C	-	25	-
Electrical power (maximum)	120/230V	780 / 850 (50 - 60 Hz)	- / 1400 (50 - 60 Hz)	2280 / 2850
Relay control*		●	●	●

* Relay output to enable control of refrigeration system or external device.

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Grant Optima™ heated circulators







			General purpose digital		Advanced digital	
			T100	TC120	TX150	TXF200
			 2.5 kg h: 335 mm d: 172 mm w: 120 mm	 2.5 kg h: 335 mm d: 172 mm w: 120 mm	 3 kg h: 345 mm d: 172 mm w: 120 mm	 3 kg h: 345 mm d: 172 mm w: 120 mm
Stability (DIN 12876)	water @ 10°C	°C	±0.1	±0.1	±0.1	±0.1
Setting resolution		°C	0.1	0.1	0.1 (0.01 with Labwise)	
Programs			-	-	1 x 30 segments via Labwise™	10 x 100 segments
Safety	over temperature		fixed	adjustable cut-out		
Alarms (can be configured to switch a relay)			-	high (no relay)	high and low	high and low
Language capability			-	-	EN, FR, DE, IT, ES	EN, FR, DE, IT, ES
Height above tank rim		mm	200	200	200	200
Depth below tank rim		mm	135	135	135	135
Display			4 digit LED		Full colour QVGA TFT	
Timer			-	1 min to 99 hrs, 59 mins		
Calibration points			2		5	
Communication interface			-		USB, RS232, Temperature probe	
Heater power		kW 230/120V	1.3 / 1.4		1.9 / 1.4	
Electrical power		kW 230/120V	1.4 / 1.5		2.0 / 1.5	

Grant Optima™ thermostat pumps (integral)




Maximum pressure	water	mbar		210	310	530
Maximum flow	water	L/min		16	18	22 (adjustable flow rate)
Pump connector	6 mm bore			fits 9 mm inner diameter tubing		
Pump connector	11 mm bore			fits 15 mm inner diameter tubing		

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Options and accessories

Labwise™ PC software (optional)					
Allows two-way communication for status display, programming and data capture (see p. 3.1. for more information). USB cable provided			-		
External probes					
TXPEP plastic probe			-	•	•
TXSEP stainless steel probe			-	•	•
Vertical turbine pumps (optional) - when pump is fitted, available working area is reduced.					
Low noise, compact design. Supplied with pipe connections and special lid for fitting to tank, pipe bore 12.7 mm.					
VTP1				Required only where application demands a higher pressure than that delivered by the internal to maintain flow.	
maximum pressure	1000 mbar				
maximum flow	9 L/min			Note: The optional VTP pumps will transfer additional heat to the baths and reduce the net cooling power of the refrigeration unit. when ordering a VTP pump, please specify which refrigeration base unit it is to be used with.	
VTP2					
maximum pressure	1650 mbar				
maximum flow	12 L/min				
Heat exchange coil					
CW5 Other sizes of heat exchange coil can be made to your specification, contact us for further information				Temperature range: 2°C above the temperature of the coolant Coil Øxl (mm): 77x55 Pipe bore inlet/outlet (mm): 7	
Hose Kits					
HOSE100 General purpose hose kit: -40 to 100°C				Hose kit 2 x 2m, assembled with Optima™ pump outlet plate and simple hose clips, no tools required (can be cut to length as required)	
HOSE200 High temperature hose kit: -50 to 200°C					

High pressure pumps (optional)

			VTP pumps		Heat exchange coil
			VTP1	VTP2	CW5
					
Maximum pressure	water	mbar	1000	1650	-
Maximum flow	water	L/min	9	12	-
Pipe bore	inlet/outlet	mm	12.7	12.7	7
Electrical connection			10 amp IEC	10 amp IEC	-
Power consumption			30	40	-
Power output to liquid @ 20°C			15	22	-
Safety			thermal fuse	thermal fuse	-
Temperature range			-	-	2°C above coolant temperature
Coil Øxl			-	-	77 x 55