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Recirculating Chillers

Grant
IN THE LABORATORY

Stand-alone closed circulators providing powerful, accurately controlled cooling for analytical techniques and instruments where an optimum operating temperature is required. In addition, RC1400G can be used as heated circulators.

- Precise temperature control
- Low coolant consumption*
- Settable high and low alarm levels with lamp and buzzer
- Over/under temperature cut-outs
- Flow fail device cuts power if no liquid in system
- Digital temperature display

*Use: Water for range +5 to +60°C
Water/glycol mixture for –10 to +5°C

Recirculating Chillers
As specified. Mounted on lockable wheels. For 220-240V 50Hz single phase supplies

CL110-25 Model RC1400G
CL110-30 Model RC3000G

Catalogue No			***CL110-25***	***CL110-30***
Model			RC1400G	RC3000G†
Temperature range		°C	–10 to +60	–10 to +60
Typical cooling power at 20°C		*W*	1100	3000
Heater power		*kW*	1.50	— †
Stability at 20°C (DIN58966) (using water)		±°C	0.25	0.5**
Maximum liquid flowrate		*litres/minute*	15	15
Pump head pressure at 1 litre/minute		*bar*	0.62	1.60
Dimensions	*D*	*mm*	630	840
	W	*mm*	380	490
	H	*mm*	590	640
Weight		*kg*	53	88
Inlet/outlet connections		*mm*	9.5 diameter — both models	
Reservoir capacity		*litres*	2.5	1.1
Operational ambient temperature range		°C	+5 to +35 — both models	
EMC emissions		*class*	A	B
Supply requirements			220-240V 50Hz single phase supplies — both models	

†Note: The RC3000G has no heater and therefore is designed for cooling applications only. It can control to +60°C where the temperature of the exothermic reaction or process is above +60°C; this is achieved by switching the cooling on and off.

*With 10 litres of water in the system. **With 25 litres of water in the system.

Accessories

Bypass RC BYP
Ensures that the flow through the chiller is always at least 1 litre/minute so that the chillers' flow-fail device does not engage. This maintains temperature control and system integrity if narrow tubing or small cooling cells are used in an external circuit.

CL110-85 RC BYP

Pressure gauge RC PR
Indicates output pressure from the chiller.

CL110-89 RC PR
CL110-93 PRES Priming reservoir

CL110

Refrigeration Units, LT ecocool

Grant
IN THE LABORATORY

Benchtop refrigeration units with built-in thermostatic controllers, stainless steel tanks and pumps providing a source of temperature controlled, refrigerated liquid for cooling applications, or as low temperature baths.

- Choice of model ranges:-
  - — -20 to +100°C or -25 to +150°C
  - — Tank volumes: 5 or 6 litres
- Active cooling throughout the whole temperature range
- High power (up to 500W) cooling available if required
- Controller includes digital display of set/actual temperature, three temperature pre-sets, 1 minute to 99 hour 59 minute timer and high (and low – CL120-70 only) temperature alarm settings
- "Eco" mode operation provides up to 80% energy saving compared to standard chillers with compressor on/off modes
- High pressure pumping up to 2 bar
- Adjustable overtemperature cut-out
- Model LT ecocool 150 additionally has a USB interfaces for remote control via the user's computer using accessory Labwise software and DIN sockets for connection to external temperature probes

Catalogue No		***CL120-45***	***CL120-70***
Model		LT ecocool 100	LT ecocool 150
Temperature range	*°C*	–20 to +100	–25 to +150
Typical cooling power at 20°C	*W*	250	350
Stability at 20°C (using water)	±°C	0.05	0.02
Liquid flowrate	*litres/minute*	17	14 to 22 (adjustable)
Pump head pressure at 1 litre/minute	*mbar*	250	530
Calibration points		2	5
Customisable programmes (segments)		–	1 (30)
Temperature pre-sets		3	3
Alarms		High	High and low
Interface port		–	USB
Ext. temperature probe socket		–	6-pin mini DIN
Display		LED	Colour QVGA TFT
Dimensions D	*mm*	430	430
W	*mm*	240	245
H	*mm*	640	640
Weight	*kg*	28	28
Inlet/outlet connections	*mm*	Super seal, 9.5 diameter tubing ferrule, M16 or BSP— both models	
Reservoir capacity	*litres*	5	6
Supply requirements		230V 50Hz single phase supplies — both models	

CL120-45

Refrigeration units, LT ecocool

As described. Supplied with built-in controller and pump, stainless steel tank, lid and connectors and adapters for super seal, tubing ferrule, M16 or BSP connections. For 230V 50Hz single phase supplies.

CL120-45 LT ecocool 100
CL120-70 LT ecocool 150

Accessories

Labwise software

Allows remote set-up and programming of the thermostat controllers from the users' PC, real-time temperature/time profiles, graphical representation of process to be displayed, logging of profiles and programme storage to disk. Requires Windows™ software. Supplied with connection cable.

BJ189-75 Labwise software

Remote Temperature Probes

Pt1000 external temperature probes for use with thermostat controllers in remote heating/cooling applications. With 3 metres of cable.

BJ242-20 TXPEP, fast response, nylon, 100mm x 4.5mm length x diameter
BJ242-25 TXSEP, robust, stainless steel, 125mm x 5mm length x diameter

Racks

If used as conventional low temperature baths the refrigeration unit tanks will accept 1 x QR series rack - *see BJ188-10 to BJ188-23.*

Refrigeration Units

PolyScience®

Integrated refrigeration units with built-in thermostatic controllers and insulated, stainless steel bath tanks to ensure economical operation with high accuracy and stability.

- Choice of four thermostatic controller levels; MX, Standard Digital (SD), Advanced Digital (AD) and Advanced programmable (AP)
- Temperature ranges from -40°C up to +200°C, dependent on the controller chosen and bath fluid chosen
- All controllers feature pumped, closed-circuit circulation with AD and AP units additionally offering open-circuit circulation with return suction and remote monitoring/control using accessory Pt100 temperature probes
- Safety features include high/low temperature limits with alarms and indicators, low liquid level safety cut-out and power outage reset

Thermostatic Controllers

Ref.		MX	SD	AD	AP
Maximum temperature,	°C	+135 (MX controller), +200 (rest of range)			
Stability	±°C	0.07	0.04	0.01	0.005
Display (backlit), resolution	°C	LCD, 0.1	LCD, 0.1	LCD, 0.01	Colour LCD, 0.01
Pump max. pressure (water)	*mbar*	120	200	250	250
Max. pump flow rate	*l/min.*	11.9	10.2	16.7	16.7
Max. suction flow rate	*l/min.*	—	—	12.2	12.2
Pump speed		single	two	variable	variable
Temperature calibration points		1	1	1	10
Programming capability?		—	—	—	Yes
Timer?		—	—	Yes	Yes
Interfaces		—	RS232	RS232/RS485, USB, ethernet - both models	
Inlet/outlet tubing bores	*mm*	13 - all models			
Supply requirement		240V 50Hz single phase - all models			

Catalogue no.,	*MX controller*	***CL123-05***	**—**	***CL123-10***
	SD controller	***CL123-20***	**—**	***CL123-25***
	AD controller	***CL123-30***	***CL123-35***	***CL123-40***
	AP controller	***CL123-45***	***CL123-50***	***CL123-55***
Minimum temperature	°C	-20	-40	-30
Refrigerant		R134A	R404A	R404A
Tank capacity	*litres*	7	7	15
Working access L x W x D,	*mm*	157 x 142 x 127	157 x 142 x 127	212 x 276 x 140
Inlet/outlet tubing bores	*mm*	13 - all models		
Overall L x W x H,	*mm*	541 x 221 x 645	541 x 221 x 617	569 x 368 x 683
Weight,	*kg*	38.1	40.8	53.5

Other ranges are available - *details on request*

Refrigeration Units, Polyscience

As described. For 240V 50Hz single phase supplies.

CL123-05 MX07R-20, 7 litres, -20 to +135°C
CL123-10 MX15R-30, 15 litres, -30 to +135°C
CL123-20 SD07R-20, 7 litres, -20 to +200°C
CL123-25 SD15R-30, 15 litres, -30 to +200°C
CL123-30 AD07R-20, 7 litres, -20 to +200°C
CL123-35 AD07R-40, 7 litres, -40 to +200°C
CL123-40 AD15R-30, 15 litres, -30 to +200°C
CL123-45 AP07R-20, 7 litres, -20 to +200°C
CL123-50 AP07R-40, 7 litres, -40 to +200°C
CL123-55 AP15R-30, 15 litres, -30 to +200°C

Bath fluids, PolyScience

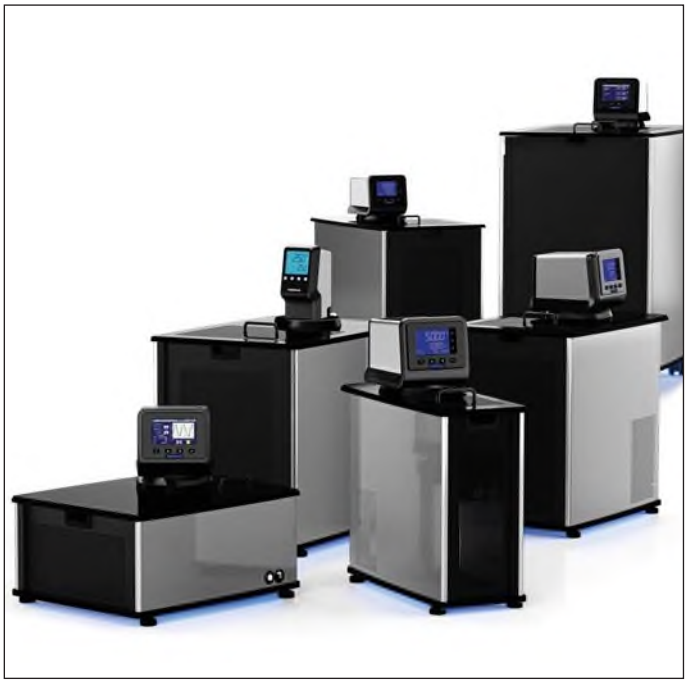
Supplied in packs of one gallon (3.8 litres).

BJ464-03 -50 to 100°C, viscosity 3cSt at 25°C
BJ464-06 -50 to 150°C, viscosity 50cSt at 25°C
BJ464-09 100 to 200°C, viscosity 125cSt at 25°C
BJ464-12 150 to 250°C, viscosity 500cSt at 25°C

Accessory Pt100 Temperature Probes

For use with AD/AP controllers only when monitoring/controlling the contents of remotely heated vessels in open-circuit operation.

BJ443-92 Pt100 probe, 0.6m cable
BJ443-96 Pt100 probe, 2m cable
BJ443-98 Pt100 probe, 8m cable



CL123

Refrigerated Circulator Baths

stuart®

- Choice of model:
  - SRC4, benchtop with compact footprint
  - SRC14, larger capacity, floor-standing unit mounted on castors for mobility
- Integral digital controller, display and overtemperature cut-out
- Tank drain for easy emptying and cleaning

Catalogue No.		***CL140-15***	***CL140-25***
Model		SRC4	SRC14
Range	°C	–20 to +30	–20 to +30
Stability	±°C	2	2
Tank capacity	*litres*	3	14
Pump capacity (zero head)	*litres/minute*	9	18
Extraction rate at 0°C	*W*	400	1000
Overall W x D x H	*mm*	232 x 497 x 490	354 x 384 x 851
Weight, net	*kg*	25	41

Refrigerated Circulator Baths, Stuart
As specified. With integral controller, overtemperature cut-out and tubing inlet/outlet ferrules for 9mm bore tubing. For 230V 50Hz single phase supplies.

CL140-15 SRC4
CL140-25 SRC14

TECHNE

Catalogue No.		***CL160-07***
Model		RB5A/TE10D
Range	°C	–20 to +100
Stability	±°C	0.01
Thermoregulator		TE10D digital
Tank capacity	*litres*	7
Pump capacity	*litres/minute (zero head)*	10 *mBar* 145
Extraction rate at 0°C	*W*	145
Power rating	*kW*	1
Overall W x D x H	*mm*	235 x 430 x 566
Weight, net	*kg*	31

Refrigerated Circulator Bath, RB5A
As specified. With integral controller which includes an overtemperature cut-out. For 230V 50/60Hz single phase supplies.

CL160-07 RB5A/TE10D digital

CL140-15

CL140-25

CL160-07

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