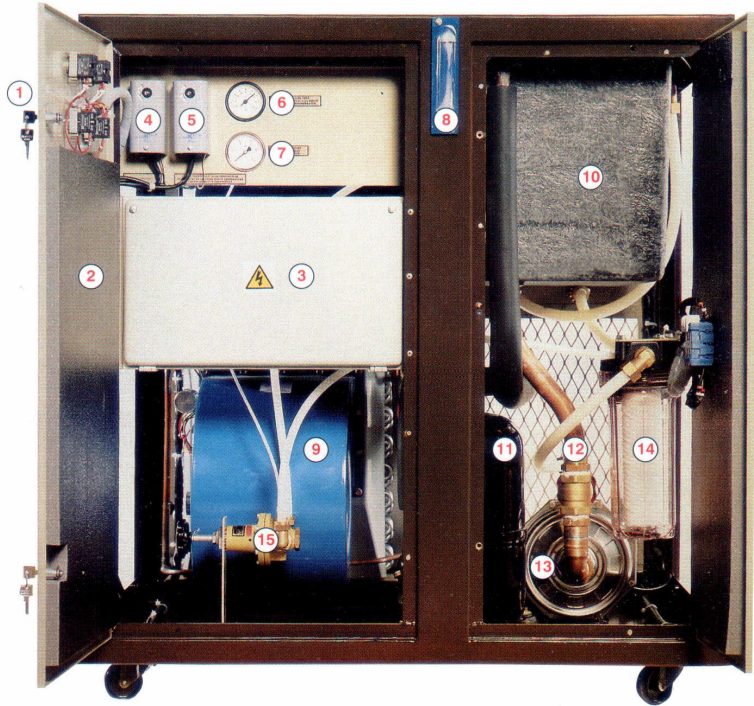




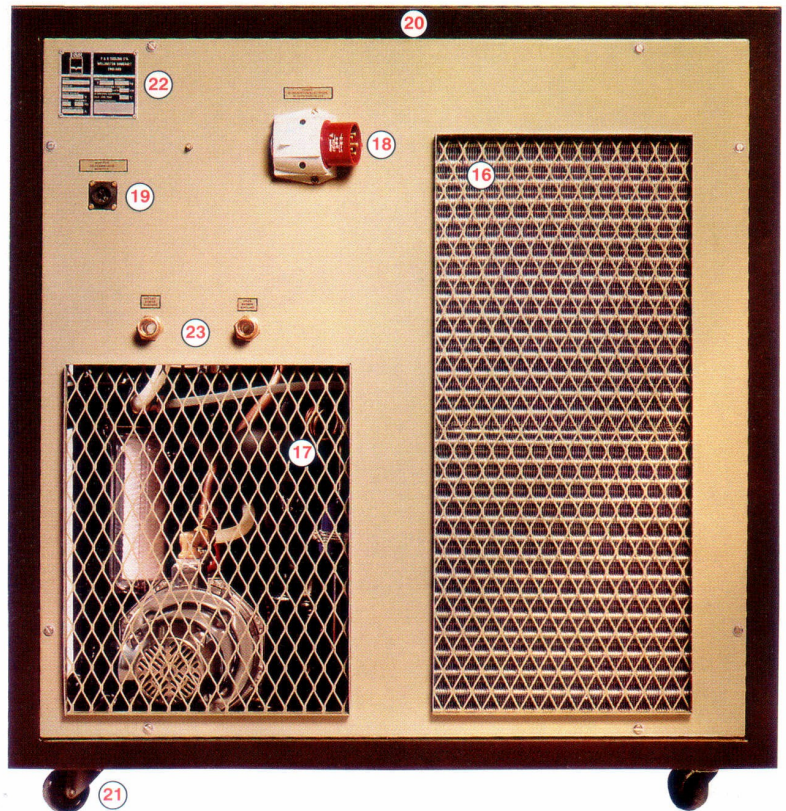
SCU
CHILLERS
CHILLERS

SCU Chillers

- Fully self contained with all operations and safety controls.
- 5 models 1.4 – 8.1kW nominal capacity.
- Non-ferrous high pressure pump circuit.
- Low operating noise levels.



No.	Description
1	Lockable control panel
2	Sound insulation material
3	Electrical control box
4	Control thermostat
5	Freeze protection thermostat
6	Water temperature gauge
7	Water pressure gauge
8	Water level indicator
9	Centrifugal fans
10	Fibre glass water tank
11	Fully hermetic compressor
12	Non ferrous fluid circuit
13	Stainless steel pump
14	100 micron water filter
15	Water pressure regulator
16	Condenser – air outlet
17	Air inlet
18	Plug & socket
19	External control monitor
20	Frame robust & lightweight
21	Heavy duty castors
22	Identification plate
23	Inlet & outlet connections



F&R Coolers in the Laboratory

Wherever scientific equipment needs cooling with clean cool water there is a chiller in F&R Products SCU series that is purpose built for the application.

SCU chillers are employed in laboratories worldwide for cooling such apparatus as:-

- Electron Microscopes
- Mass Spectrometers
- Diffractionmeters
- Linear Accelerators
- N.M.R.
- X-Ray Equipment
- Laser Equipment
- Vacuum Equipment
- Vacuum Pumps
- Centrifuges
- Freeze Drying Equipment

Assured Purity with Constant Temperature & Pressure Control

SCU close circuit recirculatory chillers are designed to ensure that the water you need for cooling is supplied to your laboratory equipment at a constant purity – constant pressure – constant temperature and to ensure this, many standard features have been built into the equipment.

GENERAL SPECIFICATION

Water Circuit

The water system is a closed circuit of non-ferrous constructions so that only clean water is circulated. Operation is completely independent of mains supply.

Pump

High pressure centrifugal type with stainless steel impeller and casing.

Filter

Cartridge type with large surface area capable of removing particles down to 100 micron.

Pressure Regulator

Adjustable pressure regulator maintains a constant water pressure output from the chiller.

Pipework

All non ferrous construction including plastic water level indicator and GRP tank, terminating with male BSP inlet and outlet connections.

Electrical Circuit

Standard coolers operate on UK supply. Different voltages can be supplied on request.

Control Panel

Starters, relays, overloads and all main items of the electrical system are incorporated in a control panel accessible through the lockable front door of the cabinet.

Refrigeration Circuit

Compressor

Fully hermetic, engineered for long trouble free life.

Condenser

Air cooled – copper tubes, aluminium finned with rated capacities up to ambient temperatures of 43°C (27°C nominal). Water cooled condensers can be supplied if required.

Evaporator

Non-ferrous copper tube with stainless steel supports immersed in GRP water tank.

Noise Levels

The use of low noise centrifugal fans and sound attenuated enclosure ensure the SCU units operate quietly. SCU chillers exhibit a preferred noise criterion curve below NC50.

Temperature Control

A high resolution, stable electronic thermostat gives an operating differential of $\pm 1^{\circ}\text{C}$ as standard. If closer tolerances are required a $\pm 0.1^{\circ}\text{C}$ option is available.

A high temperature alarm thermostat is fitted as standard for connection to the apparatus being cooled. If a rise in water temperature above the set maximum is detected, the over temperature thermostat will switch off the apparatus to avoid damage whilst allowing the chiller to continue running.

Cabinet

The complete unit is housed in a painted steel cabinet of pleasing design that harmonises with laboratory equipment. Air inlet and outlet are at the rear of the unit with provision for the fitting of ducting for external air intake and exhaust.

Options

- Water Flow Switch
- De-ionising & Conductivity Monitoring
- Water Pressure Switch
- Timed Shut Down Cycle
- Low Temperature Alarm
- Special Electric Controls
- Special Water Pressure and Volume Type Pumps.

SPECIFICATIONS

	Instrument Water		Starting current Amps	Full Load Current Amps	Approx. Sound Levels dBA at 2m free field
	Litres per Minute	Bar			
SCU 1	14	4.2	62	16.9	59
SCU 2	14	4.2	79	18.0	59
SCU 3	20	4.1	82	17.8	56
SCU 4	20	4.1	46*	10.7*	56
SCU 5	35	3.8	59*	11.5*	59

Currents stated for 240V-1PH-50HZ except at *.

* Per phase at 415V-3PH-50Hz.

CORRECTION FACTORS

Ambient Air	Correction Factor
25°C	1.03
27°C	1.00
30°C	0.95
35°C	0.85
40°C	0.80
43°C	0.75

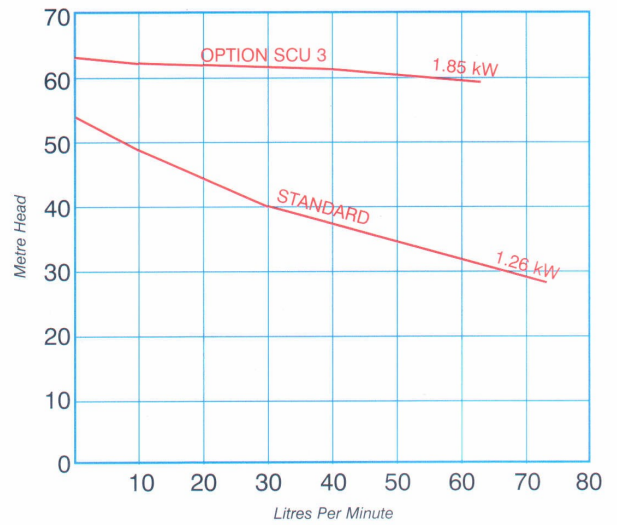
EXTRACTION RATES

LWT	Model	SCU1	SCU2	SCU3	SCU4	SCU5
20°C	K.Cals/hr	1400	2650	4350	5400	8250
	Watts	1628	3081	5058	6279	9593
15°C	K.Cals/hr	1250	2500	3700	5000	7000
	Watts	1453	2907	4302	5814	8139
10°C	K.Cals/hr	1050	2050	2950	4050	5850
	Watts	1221	2384	3430	4709	6802
5°C	K.Cals/hr	900	1650	2450	3100	4650
	Watts	1046	1919	2849	3605	5407

Duties below 5°C consult manufacturer for details.

Duties at 27°C ambient air onto condenser.

PUMP DUTIES



Chilled Water Temp. (Water Out)

DIMENSIONS

	SCU1	SCU2	SCU3	SCU4	SCU5
Width (mm)	560	560	1000	1000	1000
Depth (mm)	765	765	764	764	764
Height (mm)	1165	1165	1070	1070	1420
Weight (Kg) approx.	175	175	220	220	270
Water Conns (BSP)	1/2"	1/2"	3/4"	3/4"	3/4"



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