

Eclipse

-86°C Freezers

Creating the
right conditions



RS Biotech's name is synonymous with Quality, Reliability and Value through the Galaxy range of CO₂ Incubators, and these firmly held values have been extended to encompass the new Eclipse -86°C freezers.

Built For Long Life

All Eclipse freezers are constructed using 1.2 mm steel finished with a scratch and rust resistant powder coating. The interior is manufactured using high grade 304L stainless steel. 100v, 500v and 700v models are fitted with the appropriate castors and adjustable levelling feet.

The insulation on models 400 and 600 is 130mm thick polyurethane foam. On models 100v, 500v and 700v thin wall vacuum insulation panels with Nanogel™ sandwiched in a metallic film barrier bonded to polyurethane foam is used, giving a total thickness of 80mm of insulation.

Locking handles with a robust cam action provide ease of opening as well as a secure closing mechanism. The number of internal compartments varies according to model (see chart on back cover).





Design Features

- Two stage hermetically sealed cascade refrigeration system
- High quality stainless steel interior and adjustable shelves for long life and ease of cleaning
- Reduced footprint and greater storage space in 100v, 500v and 700v models: All models pass through standard doorways and are fitted with castors
- Convenient single handed door opening and secure cam latch closing
- Rapid re-opening of the door assisted by the heated vent which prevents vacuum build up.
- Easy access for maintenance of grille and filters
- CO₂ back-up
- Can integrate with remote Building Management System

Safety and security are as important to us as they are to you...

- Audible and visual alarm for the temperature, power and filter systems
- Non-volatile memory maintains user setpoints following power interruption
- Password protection of user setpoints
- Security lock on outer door and a security plate to protect power and alarm switches
- Temperature display and alarms are fully functional via battery back-up during power failure
- CO₂ back-up systems are available as an option

Temperature Control

The current temperature is displayed in large green digital LED figures in a control panel that is both easy to view and programme. The microprocessor controlled temperature and alarms (with non volatile memory) are programmable from -50°C down to -86°C in 1°C increments. In the event of an interruption in power supply the battery back-up system ensures temperature display and alarm(s) remain active.

Alarm and Safety Features

Visual and audible alarms cover high / low temperature, power interruption and system failure. In addition there is a visual alarm to warn of low battery and / or a reminder to clean the filter. Remote alarm contacts can link to a building alarm system. To prevent mistaken tampering with samples the outer door is lockable and setpoints for both temperature and alarm values can be protected by utilising the four digit password facility.

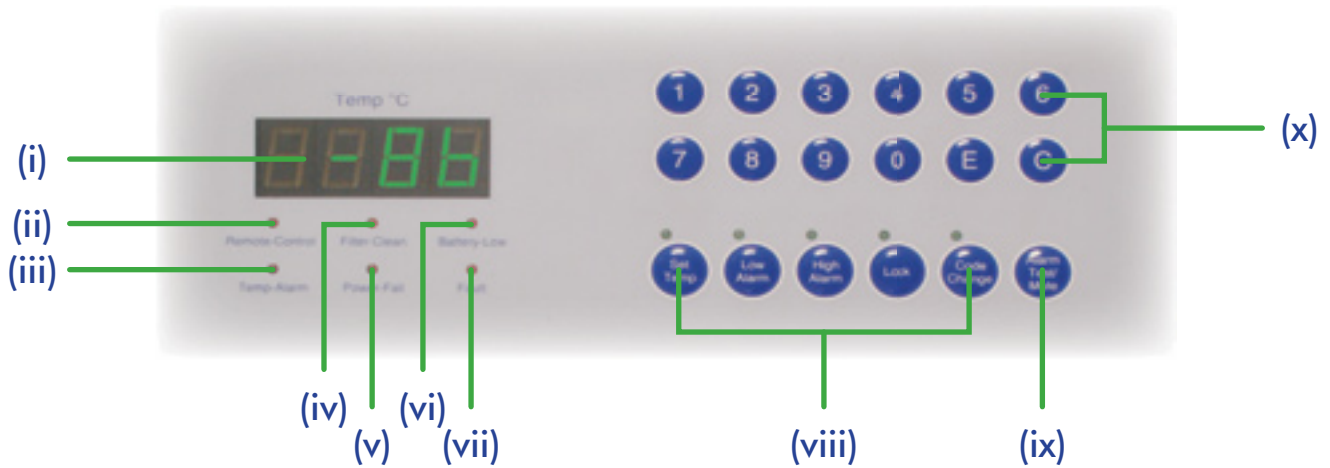
Energy and cost efficiencies

- Flexible low temperature door seals reduce cold air loss, reducing energy consumption
- Internal compartments are supplied with efficient insulated doors: 100v, 500v and 700v have insulated and sealed inner doors
- Quick temperature recovery reduces the load on compressors saving energy and maintenance costs
- Quiet yet powerful single fan reduces both noise and maintenance

Refrigeration Detail

All refrigerants are CFC-free and HCFC-free. The hermetically sealed two stage cascade system has been designed to perform in high ambient temperatures. The compressors are commercially available models that operate at a low noise level and use high-performance, biodegradable lubricants.





Control Panel

(i)	LED Display Temperature & alarm setpoints: Fault codes	(vi)	Alarm battery system – low battery warning
(ii)	Remote Control	(vii)	Fault indicator
(iii)	Indicator for high/low temperature alarm	(viii)	Programming keys for password, setpoints and alarms
(iv)	Indicates filter requires cleaning	(ix)	Alarm test/mute
(v)	Power interruption warning light	(x)	Setpoint keypad

Accessories / Options

CO₂ Back-up Module

CO₂ coolant is pulsed to avoid unnecessary over use; the system includes a safety mechanism which prevents pulsing during a door opening. With the system in use the freezer will maintain temperature between -55°C and -70°C dependent upon the local environmental conditions and CO₂ supply (typically for between 6 hours and 3 days).

Chart Recorder

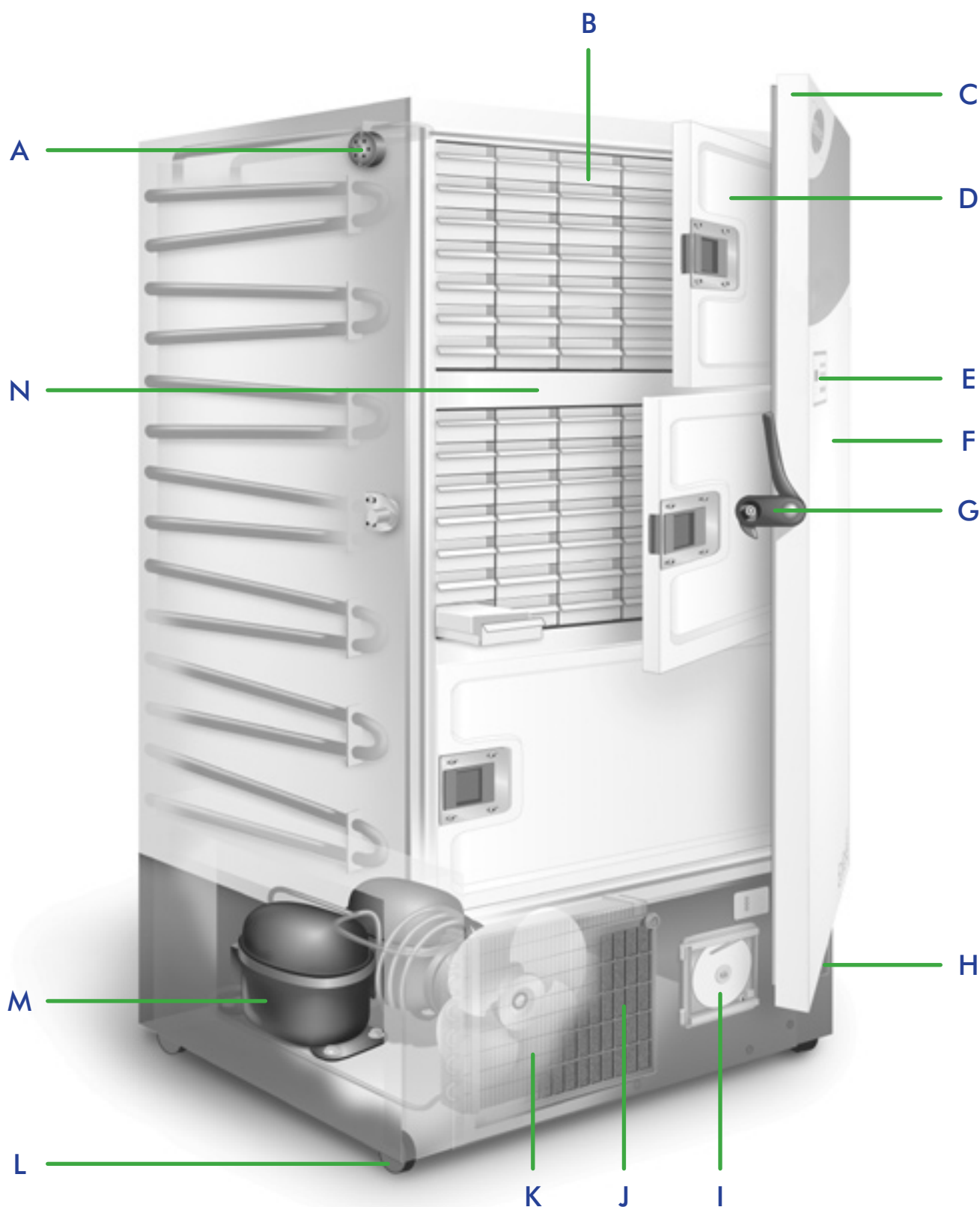
An optional chart recorder can be fitted to continuously monitor and record temperature.

Inventory Racking

Standard racks with slide out trays in lightweight aluminium hold 2", 3" or 4" boxes (50mm, 75mm, 100mm). Custom-made racking can be manufactured to special order in a selection of materials.

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A	Heated vacuum vent	H	Security plate
B	Inventory racking (optional)	I	Chart recorder (optional)
C	Outer door seals	J	Grille and filter
D	Internal compartment door	K	Fan
E	Control panel	L	Castor(s)
F	Outer door	M	Compressors
G	Lockable handle	N	Stainless steel shelf and front facia

Table of Storage Space and Racking Detail

Model	Order Code Ref	Capacity Litres	Shelves inc Base	Racks per shelf	Total racks per unit	Box Size	Boxes per rack	Boxes per unit	Vials per unit
100v	05100v-230	101	2	3	6	2"	10	60	6000
100v	05100v-230	101	2	3	6	3"	6	36	3600
400	05400-230	410	5	3	15	2"	16	240	24000
400	05400-230	410	5	3	15	3"	12	180	18000
500v	05500v-230	535	3	4	12	2"	28	336	33600
500v	05500v-230	535	3	4	12	3"	20	240	24000
600	05600-230	570	5	5	25	2"	16	400	40000
600	05600-230	570	5	5	25	3"	12	300	30000
700v	05700v-230	725	3	6	18	2"	28	504	50400
700v	05700v-230	725	3	6	18	3"	20	360	36000

Sizes, Weights, Power and Pull Down

100v	400	500v	600	700v
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Internal Dimensions (H x W x D)				
640 x 480 x 330 mm	1265 x 550 x 575 mm	1365 x 640 x 615 mm	1265 x 765 x 575 mm	1365 x 865 x 615 mm

External Dimensions of Casing (H x W x D)				
830 x 900 x 566 mm	1915 x 800 x 852 mm	1950 x 800 x 867 mm	1925 x 1025 x 852 mm	1950 x 1025 x 867 mm

Additional Dimensions to the Casing				
Heat Ex. Cover (rear) 27 mm (D)	–	–	–	–
Door Handle (front) 35 mm (D)	Door Handle (LHS) 60 mm (W)	Door Handle (LHS) 60 mm (W)	Door Handle (LHS) 60 mm (W)	Door Handle (LHS) 60 mm (W)
Door Hinge (LHS) 10 mm (W)	Door Hinge (RHS) 10 mm (W)	Door Hinge (RHS) 10 mm (W)	Door Hinge (RHS) 10 mm (W)	Door Hinge (RHS) 10 mm (W)
Vacuum Vent (LHS) 35 mm (W)	Vacuum Vent (top) 15 mm (H)	Vacuum Vent (LHS) 35 mm (W)	Vacuum Vent (top) 15 mm (H)	Vacuum Vent (LHS) 35 mm (W)

Capacity (Litres / Cu. Ft.)				
101 / 3.6	410 / 14.5	535 / 18.9	570 / 20	725 / 25.6

Weight for Shipment				
139 Kg	269 Kg	284 Kg	299 Kg	349 Kg

Power Use (Watts / kWh per day)				
530 / 12.72	525 / 12.60	650 / 15.6	565 / 13.56	660 / 15.84

Pull Down Hours				
3.7	3.75	4.5	4.5	4.9

Electrical Specification 220V / 50 Hz

Accessories

Part No. 05052-004 CO₂ Back-up Module for 100v, 500v & 700v
 Part No. 05051-003 CO₂ Back-up Module for 400 & 600
Safely protect your samples

- Maintain consumption between -55°C and -70°C with Liquid CO₂
- Coolant addition is pulsed to avoid excessive consumption

Part No. 05060-000 Chart Recorder
Continuously monitor and record temperature for up to 7 days

- Temperature range of +20°C and -90°C, ±2%
- Front-mounted for easy access. Factory installation recommended.