ECO FRIENDLY
GO GREEN WITH GRAM

GRAM
Biostorage you can depend on

BioCompact II

BioBasic

Compact

ATEX and NON-ATEX

Freezers & Refrigerators

Low Energy Consumption

Introducing “Application”

ATEX
The yellow ATEX application sticker on the different model ranges enables placement in environments with potential explosive atmospheres and storage of substances that can cause potential explosive atmospheres

GMP “Good Manufacturing Practice”
Models able to comply with the requirements present in GMP area, where safe storage during manufacturing of food or pharmaceuticals is paramount - ensuring consistently high quality products

GLP “Good Laboratory Practice”
Complies with the requirements for storing laboratory studies, ensuring the ability to replicate tests consistently (in the protection of man and the environment)

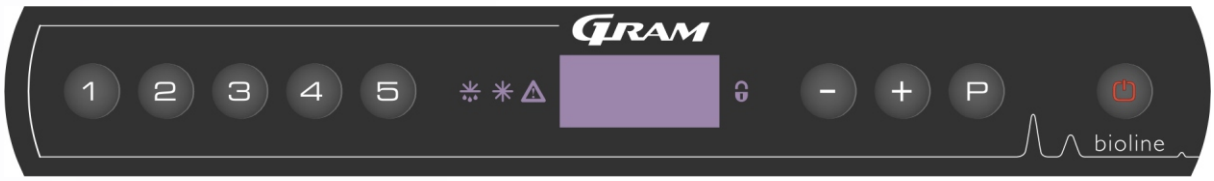
Medicine
Models that are able to comply with the performance and feature requirements, relevant to the safe storage of medicine and vaccines

Lab
Models that are able to comply with the requirements in general purpose storage scenarios such as basic exploratory research or proof of concept studies

Internal ATEX
The storage space within the cabinet complies with EN/IEC 60079-15 Category 3 Zone 2 requirements. This means the cabinet can be used for storing substances categorised as potentially explosive or with a risk of creating an explosive atmosphere.

External ATEX
All components that are in contact with the surrounding atmosphere comply with EN/IEC 60079-15 Category 3 Zone 2 requirements. This means the cabinet can be placed in any working area categorised as an explosive atmosphere Category 3 Zone 2 according to EN/IEC 60079-10.

Control Unit - Gram MPC 4.6



- **Temperature alarm**
- **Highest/Lowest temperature logging**
- **Temperature history**
- **E-sensor**
- **Voltage-free output**
- **Offset**
- **Door alarm**
- **Key pad lock**
- **Display**

This is a compact refrigerator or freezer cabinet for a wide range of biostorage purposes where the prime focus is on dependability. The BioCompact II provides you with significantly better performance for storing ordinary biomaterial under stable conditions. If you need to store different biomaterials at different time, this design gives you lots of ways to deal with individual storage needs, thanks to the versatile interior layout and a comprehensive selection of fixtures and fittings. The small footprint of this design also makes it the perfect biostorage unit for use in confined spaces.

Available with capacities of 125, 218, 250, 346 and 583 litres with either white or stainless steel finish.

BioCompact II refrigerators		
RR	**Regular refrigeration**	**+2/+20°C**
BioCompact II freezers		
RF	**Regular freezer**	**-25/-5°C**

Bio Compact II

Alarm recording
– and Hi/Low temperature read out.

Acoustic and visual alarm
– provides clear notification if either maximum or minimum permitted temperature is reached. A door alarm is also fitted. All alarm parameters are set separately.

Voltage–free contact
– for IT networks, monitoring systems and/or remote alarms.

Door lock
– for avoiding unattended entry.

Smart defrost
– smart automatic defrosting system with re-evaporation of the defrost water.

Gram BioLine ventilated air circulation system
– featuring a special distributor plate that ensures consistent temperatures everywhere in the cabinet.

Extra Sensor
– "E-sensor" for temperature reference in the storage compartment. The E-sensor can be combined with a reference container.

Self-closing
– solid door as standard or well-insulated glass door with LED light as an option extra for refrigerators (RR models).

High–capacity refrigeration unit
– makes sure the interior quickly returns to the specified temperature after the door has been opened.

ATEX
– the Gram BioLine range of biostorage cabinets provides you with full ATEX compliance – both internal and external.

Exterior finish
– made of lacquered steel or stainless steel finish.

Interior finish
– made of a durable one-piece moulded ABS inner lining with U-shaped rails in the walls for mounting of shelves and drawers.

Access port
– 24.5 mm port for ease of access, e.g. sensors for external temperature surveillance.

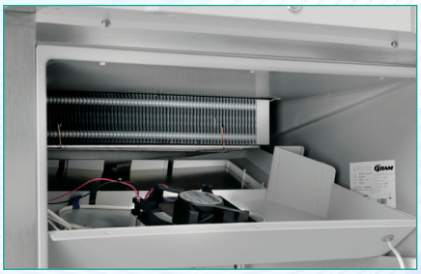
Optional extra
Practical foot pedal door opener.

The base
– can be fitted with castors or feet, or for mounting on a plinth.

Interior fittings
– a wide range of versatile interior fittings and layouts are available. The operating specifications and the interior layout can both be customised.

Top panel with BioCompact control unit
The MPC unit is specially developed for users of BioCompact storage cabinets. Among its many features are acoustic temperature and door alarms, and a voltage-free connector (NC/NO) for remote alarms. The display can be locked.

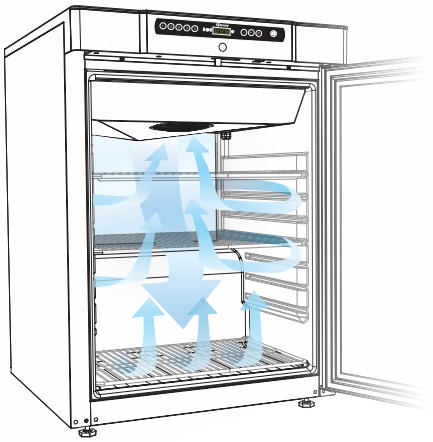
E- sensor
Extra sensor for providing a temperature reference within the storage is standard on all BioCompact II variants.



Finned tube evaporator
Using a refrigeration system based on a finned tube evaporator is unique for biostorage products in this segment, and provides unparalleled benefits. The design results in a refrigerated storage space with no cold walls that can damage any delicate items stored in the cabinet. This also makes it possible to ensure even better temperature stability inside the cabinet.

Bio Compact II RR 210 / RF 210

ATEX



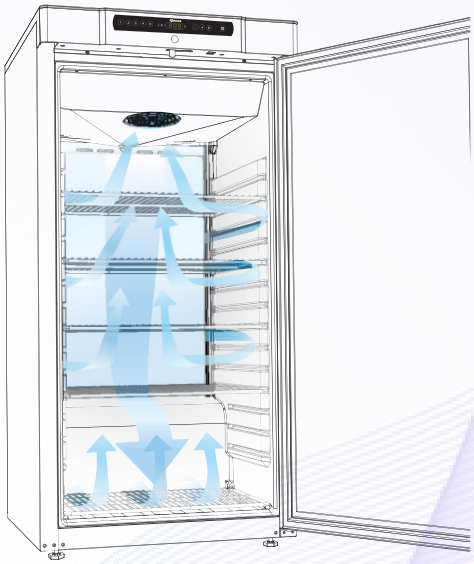
AIR DISTRIBUTION

The unique Gram BioLine air distribution system makes sure the temperature inside the cabinet remains stable at all times. With the finned tube evaporator placed in the top, there are no cold walls inside the cabinet.

Technical specifications	BioCompact II RR210	BioCompact II RF210
Temperature range	**+2°C/+20°C**	**-25°C/-5°C**
Ambient Temperature range	Solid door 10°C/35°C ; Glass Door 10°C/32°C	10°C/35°C
Control Unit	Gram Control Unit with voltage free contact, E-sensor, acoustic and visual door and temperature alarms that can be programmed individually, alarm recording and offset function	
Material Interior Material Exterior	ABS lining White lacquered steel or Stainless steel finish	
Dimensions (W x D x H)	**595 x 640 x 801/1001**	
Gross volume	**125 liters/4.4 cubic feet**	
Net volume	**104 litres/3.7 cubic feet**	
Net weight	Unpacked net weight without optional fittings : 46kg	
Modules for shelves and drawers	7 shelves, 4 drawers or 2 wire baskets	
Insulation	50 mm polyurethane with HFC-free cyclopentane propellant	
Refrigerant	R600a/R134a	
CO2e	**R134a:114**	**R134a:100**
Refrigeration capacity at -10°C	R600a 154 watt; R134a 150 watt	-
Refrigeration capacity at -25°C	-	R600a 156 watt; R134a 149 watt
Energy consumption	0.61 kWh /24h	1.53 kWh /24h
Sound level	36.5 dB(A)	39.7 dB(A)
Connection	230 V, 50 Hz	
Air system	Gram BioLine ventilated air distribution system	
Defrost system	Automatic smart defrost with re-evaporation of defrost water	

Bio Compact II RR 310 / RF 310

ATEX



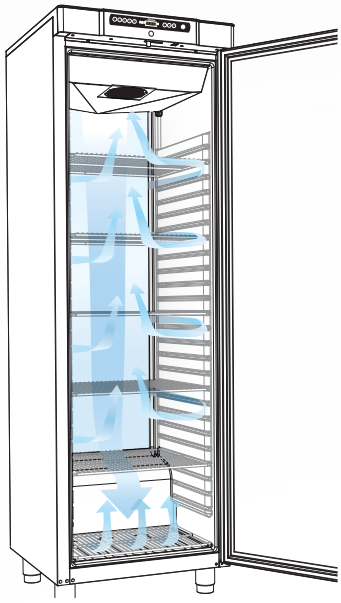
AIR DISTRIBUTION

The unique Gram BioLine air distribution system makes sure the temperature inside the cabinet remains stable at all times. With the finned tube evaporator placed in the top, there are no cold walls inside the cabinet.

Technical specifications	BioCompact II RR310	BioCompact II RF310
Temperature range	**+2°C/+20°C**	**-25°C/-5°C**
Ambient Temperature range	Solid door 10°C/35°C ; Glass Door 10°C/32°C	10°C/35°C
Control Unit	Gram Control Unit with voltage free contact, E-sensor, acoustic and visual door and temperature alarms that can be programmed individually, alarm recording and offset function	
Material Interior Material Exterior	ABS lining White lacquered steel or Stainless steel finish	
Dimensions (W x D x H)	**595 x 640 x 1190/1390**	
Gross volume	**218 liters/7.8 cubic feet**	
Net volume	**189 litres/6.7 cubic feet**	
Net weight	Unpacked net weight without optional fittings : 55kg	
Modules for shelves and drawers	14 shelves, 7 drawers, 4 wire baskets	
Insulation	50 mm polyurethane with HFC-free cyclopentane propellant	
Refrigerant	R600a/R134a	
CO2e	**R134a:136**	**R134a:114**
Refrigeration capacity at -10°C	R600a 154 watt; R134a 150 watt	-
Refrigeration capacity at -25°C	-	R600a 156 watt; R134a 149 watt
Energy consumption	0.63kWh /24h	1.69 kWh /24h
Sound level	36.8 dB(A)	39.9 dB(A)
Connection	230 V, 50 Hz	
Air system	Gram BioLine ventilated air distribution system	
Defrost system	Automatic smart defrost with re-evaporation of defrost water	

Bio Compact II RR 410 / RF 410

ATEX



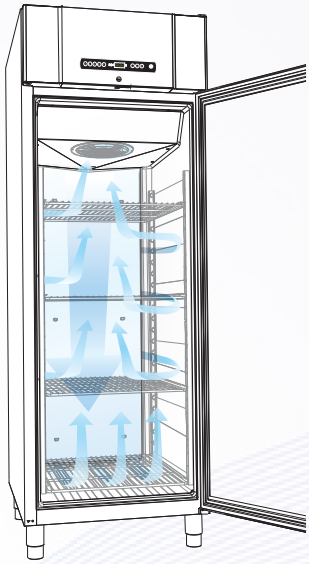
AIR DISTRIBUTION

The unique Gram BioLine air distribution system makes sure the temperature inside the cabinet remains stable at all times. With the finned tube evaporator placed in the top, there are no cold walls inside the cabinet.

Technical specifications	BioCompact II RR410	BioCompact II RF410
Temperature range	**+2°C/+20°C**	**-25°C/-5°C**
Ambient Temperature range	Solid door 10°C/35°C ; Glass Door 10°C/32°C	10°C/35°C
Control Unit	Gram Control Unit with voltage free contact, E-sensor, acoustic and visual door and temperature alarms that can be programmed individually, alarm recording and offset function	
Material Interior Material Exterior	ABS lining White lacquered steel or Stainless steel finish	
Dimensions (W x D x H)	**595 x 640 x 1776/1976**	
Gross volume	**346 liters/12.3 cubic feet**	
Net volume	**312 litres/11.1 cubic feet**	
Net weight	Unpacked net weight without optional fittings : 78kg	
Modules for shelves and drawers	25 shelves, 13 drawers and 7 wire baskets	
Insulation	50 mm polyurethane with HFC-free cyclopentane propellant	
Refrigerant	R600a/R134a	
CO2e	**R134a:172**	**R134a:136**
Refrigeration capacity at -10°C	R600a 207 watt; R134a 226 watt	-
Refrigeration capacity at -25°C	-	R600a 175 watt; R134a 195 watt
Energy consumption	0.73kWh /24h	2.13 kWh /24h
Sound level	35.1 dB(A)	38.6 dB(A)
Connection	230 V, 50 Hz	
Air system	Gram BioLine ventilated air distribution system	
Defrost system	Automatic smart defrost with re-evaporation of defrost water	

Bio Compact II RR 610 / RF 610

ATEX



AIR DISTRIBUTION

The unique Gram BioLine air distribution system makes sure the temperature inside the cabinet remains stable at all times. With the finned tube evaporator placed in the top, there are no cold walls inside the cabinet.

Technical specifications	BioCompact II RR610	BioCompact II RF610
Temperature range	**+2°C/+20°C**	**-25°C/-5°C**
Ambient Temperature range	Solid door 10°C/43°C ; Glass Door 10°C/38°C	10°C/43°C
Control Unit	Gram Control Unit with voltage free contact, E-sensor, acoustic and visual door and temperature alarms that can be programmed individually, alarm recording and offset function	
Material Interior Material Exterior	ABS lining with wall rails in stainless steel White lacquered steel or Stainless steel finish	
Dimensions (W x D x H)	**695 x 868 x 1875/2075**	
Gross volume	**583 liters/20.6 cubic feet**	
Net volume	**419 litres/16.7 cubic feet**	
Net weight	Unpacked net weight without optional fittings : 114kg	
Modules for shelves and drawers	Shelves 24 (recommended 5) - Drawers 12	
Insulation	60 mm polyurethane with HFC-free cyclopentane propellant	
Refrigerant	R600a/R134a	
CO2e	**R134a:329**	**R404a:863**
Refrigeration capacity at -10°C	R600a 354 watt; R134a 314 watt	-
Refrigeration capacity at -25°C	-	R290 512 watt; R404a 568 watt
Energy consumption	1.15kWh /24h	3.88 kWh /24h
Sound level	48.0 dB(A)	50.4 dB(A)
Connection	230 V, 50 Hz	
Air system	Gram BioLine ventilated air distribution system	
Defrost system	Automatic smart defrost with re-evaporation of defrost water	

BioBasic 210, 310, 410

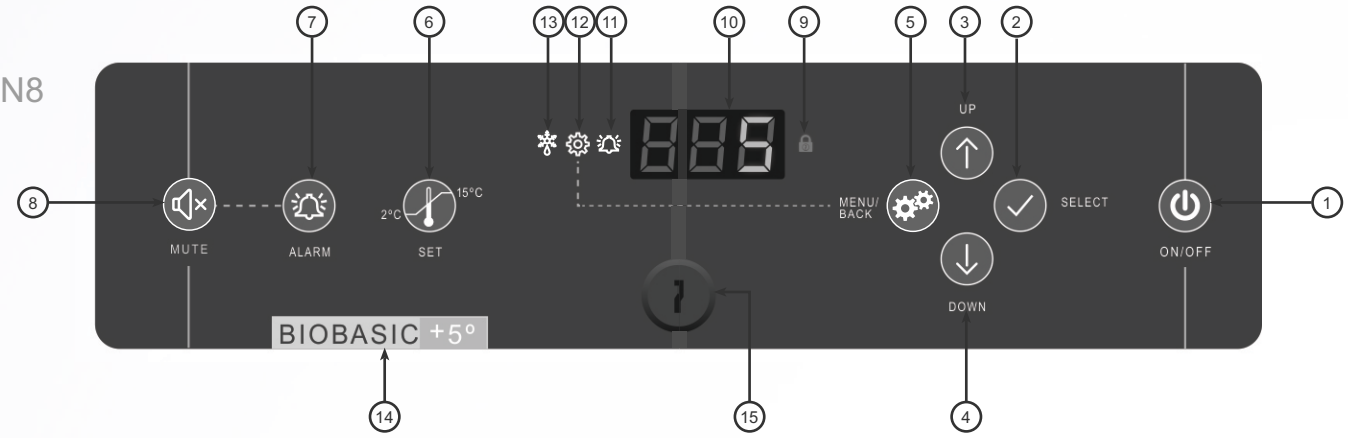
The BIOBASIC range is available as a refrigerator or freezer as 125L, 218L or 346L models.

Key Features

The BIOBASIC range offers cost-effective biostorage solutions for a host of applications.

With temperature alarms, internal and external ATEX, no cold walls and a user-friendly interface, the BIOBASIC range provides an exceptional selection of features in a very small package.

With three sizes to choose from, the BIOBASIC range is well suited for use in confined spaces where performance, features and value are paramount - All available as refrigerators or freezers.



1. On/Off
2. Select or Confirm a menu parameter
3. Navigate upwards in a given menu/raise a given value
4. Navigate downwards in a given menu / lower a given value
5. Parameter setting menu / go a menu step back
6. Setpoint temperature setting
7. Temperature alarm setting
8. Acknowledge alarm, mute for 5 minutes
9. Key pad lock engaged
10. Display
11. Temperature-and/or door- alarm registered
12. Parameter setting menu is open
13. Defrost in progress
14. Visual distinction between refrigerator or freezer
15. Door lock

Top panel with BIOBASIC control unit

The BIOBASIC control unit is specifically developed for users. Among its many features are acoustic door alarm, high and low temperature alarms, and a voltage free contact (NO/NC) for remote alarms. Door lock comes as standard with two keys.

Internal and External ATEX

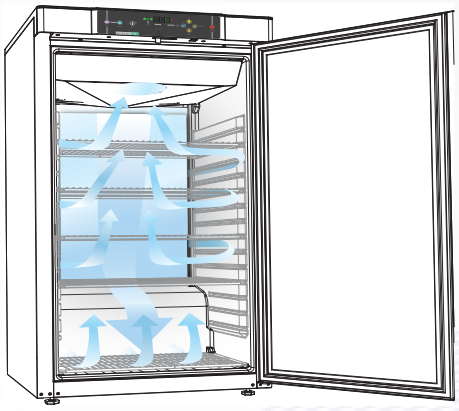
The BIOBASIC range provides full ATEX compliance -both internal and external - at no extra charge, BIOBASIC cabinets comply with EN/IEC 60079-15, electrical apparatus for use in category3, zone 2 locations where explosive gas atmospheres may be present. Enabling placement of cabinets within actual work zones, rather than at a remote location, as would be required with only internal ATEX compliance.

Performance is key

Utilizing clever design and quality components, the BIOBASIC range manages to offer cost-effective performance on a small footprint.

BioBasic RR/RF 210

ATEX



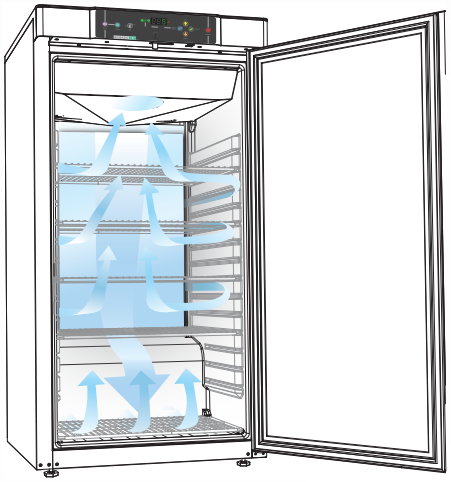
AIR DISTRIBUTION

The unique forced air distribution system makes sure the temperature inside the cabinet remains stable and uniform. With the finned tube evaporator placed in the top, there are no cold walls in the cabinet.

Technical Specifications	BioBasic RR 210 L	BioBasic RF 210 L
Temperature range	+2/+15°C	-25/-5°C
Ambient temperature range	Solid door +10°C/+35°C	
Control Unit	Bespoke user friendly BIOBASIC control unit featuring acoustic/visual temperature and door alarms, voltage free contact and calibration function.	
Material Interior Material Exterior	ABS lining Lacquered steel	
Dimensions mm (W x D x H)	595 x 640 x 831	
Gross volume / Net volume	125 litres / 104 litres	
Plastic coated wire shelves included + bottom shelf	3	
Refrigerant	R600a or R134a	
CO2e	R134a : 114	R134a : 100
Energy consumption	0,6 kWh/24h	1,1 kWh/24h
Noise level	36,5 dB(A)	39,7 dB(A)
Base	Wheels / skids	
Air system	Forced air distribution system	
Defrost system	Automatic smart defrost with re-evaporation of defrost water	

BioBasic RR/RF 310

ATEX



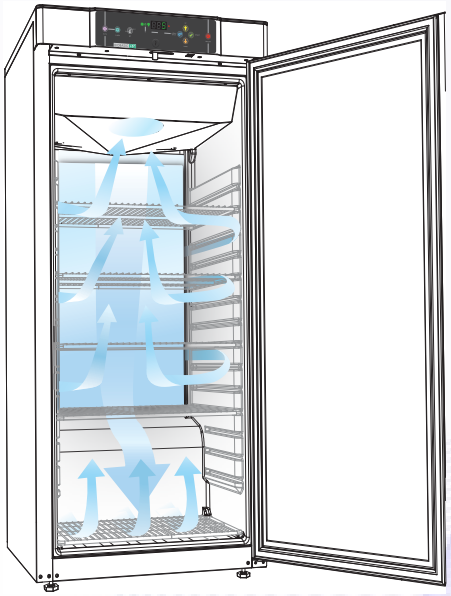
AIR DISTRIBUTION

The unique forced air distribution system makes sure the temperature inside the cabinet remains stable and uniform. With the finned tube evaporator placed in the top, there are no cold walls in the cabinet.

Technical Specifications	BioBasic RR 310 L	BioBasic RF 310 L
Temperature range	+2/+15°C	-25/-5°C
Ambient temperature range	Solid door +10°C/+35°C	
Control Unit	Bespoke user friendly BIOBASIC control unit featuring acoustic/visual temperature and door alarms, voltage free contact and calibration function.	
Material Interior Material Exterior	ABS lining Lacquered steel	
Dimensions mm (W x D x H)	595 x 640 x 1220	
Gross volume / Net volume	218 litres / 189 litres	
Plastic coated wire shelves included + bottom shelf	4	
Refrigerant	R600a or R134a	
CO2e	R134a : 136	R134a : 114
Energy consumption	0,6 kWh/24h	1,3 kWh/24h
Noise level	35,1 dB(A)	39,9 dB(A)
Base	Wheels / skids	
Air system	Forced air distribution system	
Defrost system	Automatic smart defrost with re-evaporation of defrost water	

BioBasic RR/RF 410

ATEX



AIR DISTRIBUTION

The unique forced air distribution system makes sure the temperature inside the cabinet remains stable and uniform. With the finned tube evaporator placed in the top, there are no cold walls in the cabinet.

Technical Specifications	BioBasic RR 410 L	BioBasic RF 410 L
Temperature range	+2/+15°C	-25/-5°C
Ambient temperature range	Solid door +10°C/+35°C	
Control Unit	Bespoke user friendly BIOBASIC control unit featuring acoustic/visual temperature and door alarms, voltage free contact and calibration function.	
Material Interior Material Exterior	ABS lining Lacquered steel	
Dimensions mm (W x D x H)	595 x 640 x 1876	
Gross volume / Net volume	346 litres / 312 litres	
Plastic coated wire shelves included + bottom shelf	6	
Refrigerant	R600a or R134a	
CO2e	R134a : 172	R134a : 136
Energy consumption	0,7 kWh/24h	1,6 kWh/24h
Noise level	36,8 dB(A)	38,6 dB(A)
Base	Height-adjustable legs	
Air system	Forced air distribution system	
Defrost system	Automatic smart defrost with re-evaporation of defrost water	

Integrated LED lighting

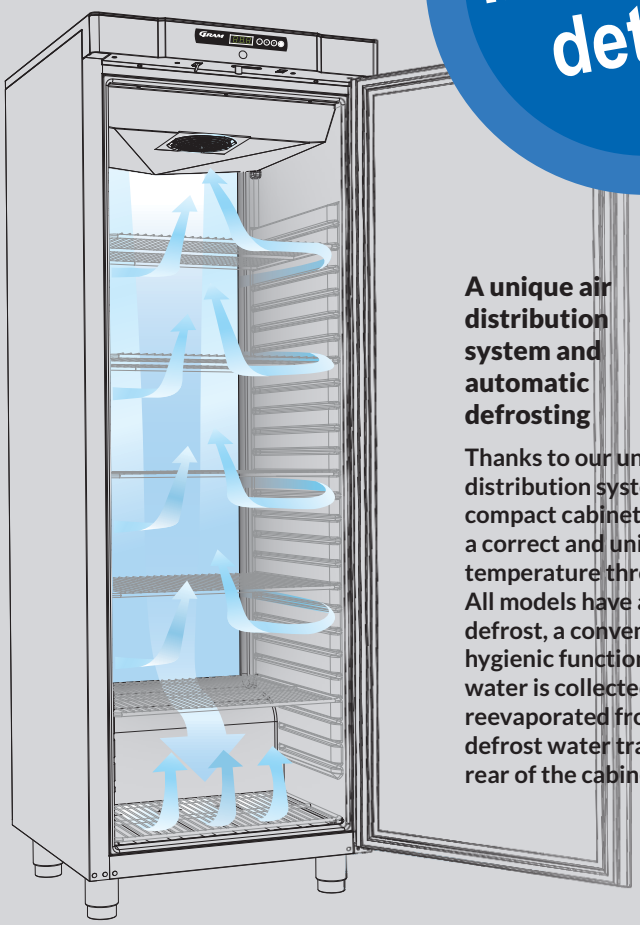
For maximum illumination LED lighting is built into the glass door.

Storage Cabinet

The Compact KG 410 RG (stainless exterior) is also available as a laboratory refrigerator with 10 shelves.

Door Lock

Innovative details



A unique air distribution system and automatic defrosting

Thanks to our unique air distribution system, the compact cabinets maintain a correct and uniform temperature throughout. All models have automatic defrost, a convenient and hygienic function. Defrost water is collected and reevaporated from a defrost water tray at the rear of the cabinet.

Sturdy wire shelves with tilt prevention

The wire shelves are mounted in U-shaped rails moulded into the ABS inner lining. This prevents the shelves from tilting when pulled out. The Compact 610 uses stainless wall rails and shelf supports.

Improved reliability

The easy to use control system provides enhanced accuracy with added alarms and emergency programs to give you extra peace of mind.

Compact 210/310

NON-ATEX

Technical Specifications		Compact 210			Compact 310		
		Refrigerators		Freezers	Refrigerators		Freezers
		K 210	KG 210	F 210	K 310	KG 310	F 310
Temperature range	°C	+2/+12	+2/+12	-22/-5	+2/+12	+2/+12	-22/-5
Refrigeration capacity at -10/+45°C	Watt	154	154	-	154	154	-
Refrigeration capacity at -25/+45°C (with closed door)	Watt	-	-	158	-	-	204
Energy consumption	kWh/24h	0,5	0,7	1,1	0,6	1,1	1,6
Added to The Energy Technology List		-	-	-	-	-	-
Connection (3)	V/Hz	230/50			230/50		
Connection load	Watt	99	103	125	99	114	141
Amperage, running figures	A	0,95	0,97	0,91	0,95	1,02	1,01
Ambient temperature min./max.	°C	+16/+35			+16/+35		
Insulation (cyklopentane)	mm	50			50		
Refrigerant (isobutane/propane) (1) (2)		R600 a			R600 a		
Volume, gross	l	125			218		
Volume, net	l	104			189		
W x D	mm	595 x 640			595 x 640		
H (feet)	mm	830			-		
H (legs)	mm	900			1300		
H (castors)	mm	925			1325		
Diagonal (310, 410 and 610 on legs)	mm	1050			1415		
Weight, gross	kg	46	52	46	61	68	62
Sound level	dB(A)	36,5	35,0	39,7	(4)	(4)	(4)

(1) Refrigerators available with refrigerant R134a
(2) Freezers available with refrigerant R404A

Compact 410/610

NON-ATEX

Technical Specifications		Compact 410			Compact 610		
		Refrigerators		Freezers	Refrigerators		Freezers
		K410	KG 410	F 410	K 610	KG 610	F 610
Temperature range	°C	+2/+12	+2/+12	-22/-5	+2/+12	+2/+12	-25/-5
Refrigeration capacity at -10/+45°C	Watt	207	307	-	354	354	-
Refrigeration capacity at -25/+45°C (with closed door)	Watt	-	-	212	-	-	512
Energy consumption	kWh/24h	0,6	1,1	1,6	0,9	(4)	3,4
Added to The Energy Technology List		✓	-	-	✓	-	✓
Connection (3)	V/Hz	230/50			230/50		
Connection load	Watt	113	117	147	241	300	435
Amperage, running figures	A	0,83	1,16	0,98	1,50	1,59	2,48
Ambient temperature min./max.	°C	+16/+35			+16/+35		
Insulation (cyklopentane)	mm	50			60		
Refrigerant (isobutane/propane) (1) (2)		R600 a			R600 a		R290
Volume, gross	l	346			583		
Volume, net	l	312			513		
W x D	mm	595 x 640			695 x 868		
H (feet)	mm	-			-		
H (legs)	mm	1875			2010		
H (castors)	mm	1900			2000		
Diagonal (310, 410 and 610 on legs)	mm	1981			2189		
Weight, gross	kg	75	84	78	111	122	114
Sound level	dB(A)	35,1	36,3	38,6	44,2	(4)	48,63

(1) Refrigerators available with refrigerant R134a
(2) Freezers available with refrigerant R404A

Data logger / Software 21 CFR

- The software is 21 CFR Part-II Compliant
- Uses latest micro controller based technology for better accuracy
- Easy on-line field calibration by front panel membrane keypad
- Field programmable channel scan time 1 to 59 sec., Logging Interval 1 to 9999 sec. & Printing interval 5 to 9999 sec.
- Field programmable delay time 1 to 99 sec. for relay output
- Optional RS-232 / RS-485 Modbus Serial / Parallel Printer Port
- 8 channel fixed input for all thermocouple, J, K, R, S, T, E, B, N programmable by user & RTD (PT-100), 4-20 mA, 0-10 VDC factory settable

Technical Specifications

Inputs	Range Minimum	Range Maximum	Resolution Normal	Accuracy Full Scale
RTD PT-100 (3 WIRE)	-200°C	400°C	0.1	±0.25%
K - Type (Cr - AL)	-50°C	1300°C	1	±0.25%
R - Type (PT - 13% Rh/PT), S -Type (PT - 10% Rh/PT)	0°C	1750°C	1	±0.25%
T - Type (Cu / CON)	-200°C	400°C	0.1	±0.25%
E - Type (NI Cr - CON)	0°C	1000°C	1	±0.25%
4 to 20 mA / 0 to 20 mA	-999°C	9999°C	Programmable	±0.25%
Voltage (0 to 1 VDC / 0 to 10 VDC)	-999°C	9999°C	By User	±0.25%
Set Point	2 independent set points for each channel with 2 common relay outputs & programmable latch / non-latch facility for relay and alarm indications.			
Relay Output	4 common relay outputs, potential free contacts or connects			
Print Interval	5 to 9999 sec. for Direct printout on 24 / 08 / 132 Column Dot Matrix			
Logging Interval	1 to 999 sec. log interval for data logger model; programmable by user			
Memory	5000 reading storage capacity for DLS 8 3000 reading storage capacity for DLS 16			
Fault Indication	Under range, over range indication for RTD and all Thermocouple I/Ps			
Dimensions for 16 Channel (H X W X D mm)	192 X 96 X 200			

Ordering Information

Order Code	Description
DLS 8	Data Logger, 8 Channel
DLS 16	Data Logger, 16 Channel
DLS SW	Software for Data Logger, 21 CFR Compliant software

Optional Accessories

Order Code	Description
DLS - A	Temperature Sensor, RTD PT100, -50°C to 400°C
DLS - B	Temperature Sensor, Thermocouple, k type, 100°C to 1200°C
DLS - C	Temperature Humidity Transmitter, -40°C to 120°C, 0 to 100%H

ECO FRIENDLY
GO GREEN WITH GRAM

Amkette Analytics
Limited

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