

GRAM

Biostorage you can depend on

CONTROLLED **BIOSTORAGE**
THE **BIOLINE**
RANGE

bioline

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The Gram BioLine range..

-is a uniquely developed range of controlled biostorage solutions. Together, these cover everything from high-specification biostorage designed for “mission-critical” work to general-purpose refrigeration and freezer units.

The Gram BioLine range features high performance and demanding specifications. We have designed, fine-tuned and optimised all the features in BioLine biostorage cabinets to ensure:

- Maximum reliability
- Stringent control
- Optimised air flows
- A responsible environmental profile
- Easy customisation
- Rapid support from trained staff

This all means, you can rely on every product in our Gram BioLine range to meet and exceed any current performance requirements right across the board.



ExGuard



BioUltra



BioPlus



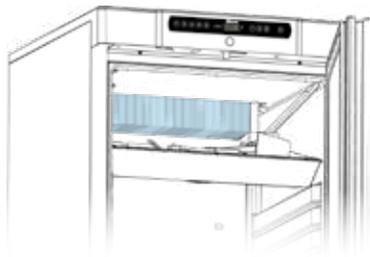
BioMidi



BioCompact II

More than the sum of the parts

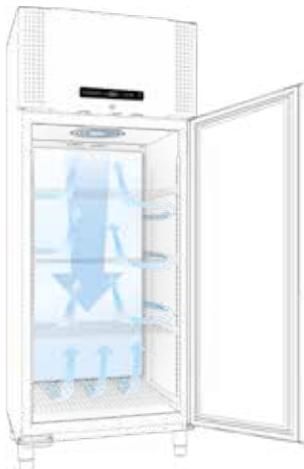
A wide range of new forward thinking, and technical innovations combine to make Gram BioLine biostorage systems the best-performing solutions currently available.



No cold walls

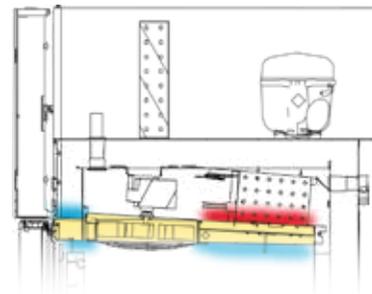
The refrigeration system based on a finned tube evaporator is the backbone of the range of Gram BioLine products, and provides exceptional benefits compared with other systems. The design results in a refrigerated storage space with no cold walls that can damage any delicate items stored in the cabinet.

When combined with the Gram BioLine air distribution system, it also ensures even better temperature stability inside the cabinet.



Optimised air flow

The unique Gram BioLine air distribution system makes sure that the temperature is



- Insulation
- Heated surface during defrost period
- Safe cold surface during defrost period

consistent everywhere in the cabinet and that the time taken to return to the programmed temperature after a door has been opened, is very short.

Temperature management

BioPlus and BioMidi are equipped with a defrost shield which ensures that only a minimum of heat is released into the storage compartment when the system is defrosting, keeping temperature peaks to an absolute minimum.

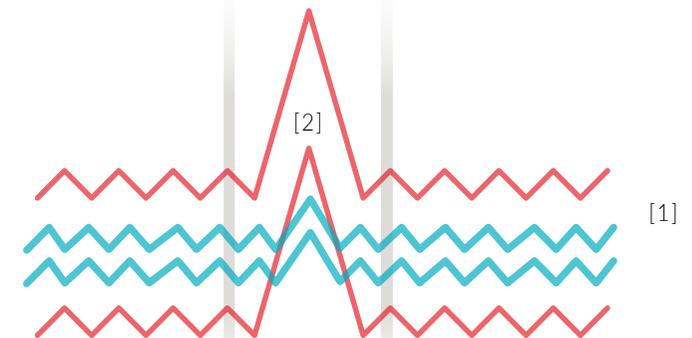
... and controlled defrosting

All Gram BioLine refrigerated units feature the "Smart

defrost" automatic defrost function. Unlike conventional defrosting systems where the user has no control of the defrost cycle, this intelligent automatic system makes sure an absolute minimum of time and energy is used during each individual defrost cycle. The defrost water is automatically re-evaporated after each defrost cycle.

Safer biostorage

The sum of all these technical innovations result in supreme temperature stability inside the cabinet [1], with greatly reduced temperature peaks during defrosting [2].



- Temperature performance, conventional defrosting
- Temperature performance, Gram Bioline

Introducing "Applications"

Distinguishing between the different model ranges and where they are best suited has become easier. "Application" icons bridge the gap between product ranges and the requirements in the different segments, work environments and use patterns. Allowing for quick and precise evaluation of needs and requirements.



ATEX

The yellow ATEX application sticker on our 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 areas, 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 medicines 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.

II 3G Ex ec nC ic IIB T4 Gc
DTI 22ATEX0248X



The BioUltra UL570 is an ultra-low-temperature freezer that operates safely at -86 °C. By utilising high-capacity components, cascade refrigeration system, latest generation vacuum insulated panel technology and insulated inner doors, the BioUltra cabinets are able to maintain safe and stable interior conditions when operating at -86 °C. The BioUltra UL570 holds up to 382 2"/50 mm boxes, 192 3"/75 mm boxes or 192 4"/100 mm boxes.

Hybrid -BioUltra is also available with a hybrid water/air-cooled condenser option**. The hybrid option combines the convenience of minimal heat/noise emission from water cooling, with the safety of a redundant condensing system in the event of interruptions in the supply of process water - securing maximum item safety and cabinet uptime.
**Requires process water supply

- High capacity cascade refrigeration system
- Vacuum insulated panels
- Insulated inner doors
- Multi-tier gasket system
- Levelling multifunctional castors
- Easy-access service hatch
- Voltage-free contact
- Acoustic and visual, high/low temperature alarms
- E-sensor
- Alarm recording
- 2 access ports
- Equalisation valve

Exterior: White lacquered steel or stainless steel
Interior: White lacquered steel, inside of doors and bottom panel in stainless steel

- 1 The Gram MPC 4.6 control unit lets you adjust several different parameters individually. This makes it easy to adjust the cabinet's operating profile to your specific requirements or changing needs.
- 2 Each UL570 is delivered with five adjustable stainless steel perforated shelves, for full utilisation of the storage space.
- 3 Two separate insulated inner doors facilitate safe operation and high flexibility. The inner doors can be removed for easy cleaning.

BioUltra freezer			* Min./Max. height
Model	UL -86 °C / -60°C	Ext. W x D x H* (mm)	Volume Litres / Cubic feet
UL570	•	856 x 979 x 1986/1996*	570/20.1 cubic feet
Sound level	49 dB(A) R404A** / 46,5 dB(A) R290	•	•
Power consumption	12,2 R404A / 10,5 kWh/24h R290	•	•

** R404A is available outside the European union



ExGuard

II 3G Ex ec nC ic IIB T1 Gc
DTI 22ATEX0249X



The ExGuard is designed for safe temperature controlled storage of items potentially emitting noxious, malodourous and/or explosive atmospheres. At the core, the ExGuard is envisioned to facilitate a safer work environment for users.

ExGuard increases work environment safety and allows placement in work environments by letting your existing ventilation system extract the hazardous atmospheres from the cabinet interior prior to you being able to access the interior.

As with all other BioLine refrigerators, the ExGuard has internal and external ATEX Category 3 Zone 2 compliance, thereby keeping the work environment safety as high as possible.

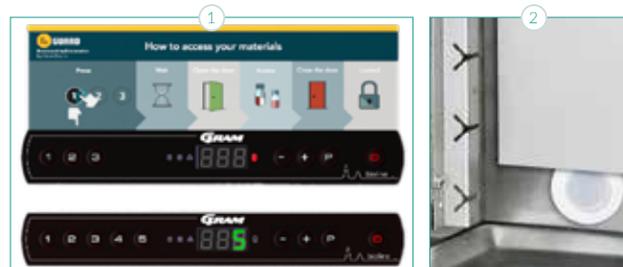
ExGuard		<i>*Min. height without base/max. height with highest base</i>	
Model	ER: -2/+20 °C	W x D x H* (mm)	Volume Litres / Cubic feet
ER600W	•	820 x 789 x 1996/2246*	Gross: 614 Net: 486

- Built in safety mechanisms that prevent the cabinet from being opened before the hazardous atmosphere have been safely extracted
- Effortless and safe daily operation
- ATEX Cat.3 Zone 2 compliant
– Internal and External
- Easy connection to your existing ventilation system**
- Minimal setup
- High capacity refrigeration system for temperature recovery
- Available with glass door
Exterior: White lacquered steel or stainless steel
Interior: Stainless steel

**Requirements for airflow dependant on items stored

① – dedicated controller for access management and extraction of cabinet interior. Hazardous atmosphere extraction mechanism – allowing hazardous atmospheres to be replaced by ambient air before the door can be opened.

② Access port 24.5 mm port for ease of access, e.g. sensors for external temperature surveillance.



A damper is controlled via the extraction controller to open and close, allowing for potentially contaminated air to be evaluated through the connected ventilation system.



Ambient air is drawn into the cabinet interior through a check valve when the damper opens, equalising the pressure in the interior thereby flushing out potentially contaminated air.

ExGuard, work safety made accessible

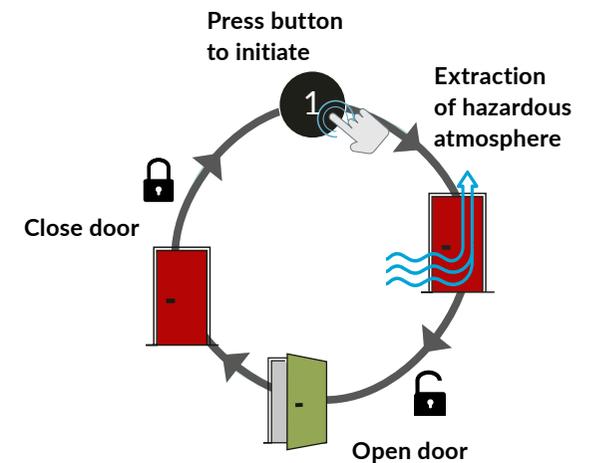
Safe temperature controlled storage of items potentially emitting noxious, malodorous and /or explosive atmospheres has until now been difficult. An option has been to customize a cabinet with extensive additions to comply with requirements - or in the worst case, using a regular storage cabinet for hazardous atmospheres, exposing users and surroundings to potential harm.



Easy to use

The ExGuards simple access procedure requires minimal training and ensures safe access to the stored items every time.

- A powerful electromagnetic lock keeps the cabinet door firmly locked under ordinary operation.
- To access the cabinet, Press the activation button on the extraction control panel. The cabinet interior will be evacuated and flushed with ambient air.
- After a successful extraction, the cabinet can be opened
- When the cabinet is closed, the door is automatically locked.



BioPlus

 II 3G Ex nA nC nL IIB T2 Gc
 II 3G Ex nA nC nL IIB T3 Gc (1270/1400)



The BioPlus range is designed for the storage of the most delicate biomaterials, in situations where even tiny fluctuations in conditions inside the storage cabinet can have a serious effect on the contents.

- Access port
- Self-closing door with key lock
- Voltage-free contact
- Acoustic and visual door alarm
- E-sensor
- Acoustic and visual temperature alarms
- Alarm recording
- Pedal door opener (not EF)

Exterior: White lacquered steel or stainless steel

Interior: Stainless steel

BioPlus refrigerators also enable you to reduce internal relative humidity, thus cutting down on any likelihood of undesirable contaminants getting near delicate biomaterials.



- 1 The Gram MPC 4.6 control unit lets you adjust several different parameters individually, so that you can adjust the cabinet's operating profile to specific requirements or changing needs.
- 2 Glass door (optional on all refrigerators) makes it easy to carry out rapid, at-a-glance checks of the contents of the cabinet.
- 3 The interior is made of stainless steel that is extremely durable, ready to withstand many years of use. Access port located in the back of the cabinet.

BioPlus				* Min. height without base/max. height with highest base	
Model	ER -2/+20 °C	RF -25/-5 °C	EF -35/-5 °C	Ext. W x D x H*	Volume Litres / Cubic feet
500	•	•		600 x 805 x 2025/2275	Gross: 500/17.7 / Net: 365/12.9
600 D	•	•		695 x 876 x 1875/2125	Gross: 600/21.2 / Net: 432/15.3
600 W	•	•		815 x 756 x 1875/2125	
600 EF			•	837 x 756 x 1875/2125	
660 D	•	•		695 x 876 x 2025/2275	Gross: 660/23.3 / Net: 484/17.0
660 W	•	•		815 x 756 x 2025/2275	
660 EF			•	837 x 756 x 2025/2275	
930	•	•		780 x 1045 x 2025/2275	Gross: 930/32.8 / Net: 702/24.8
1270	•	•		1390 x 876 x 1875/2125	Gross: 1270/44.8 / Net: 864/30.6
1400	•	•		1390 x 876 x 2025/2275	Gross: 1400/49.4 / Net: 968/34



- II 3G Ex nA nC nL IIB T5 Gc (RR 425/625)
- II 3G Ex nA nC nL IIB T3 Gc (RF 425)
- II 3G Ex nA nC nL IIB T3 Gc (EF 425)
- II 3G Ex nA nC nL IIB T2 Gc (RF 625)



The BioMidi cabinet is designed to meet the majority of biomaterial refrigeration and freezer requirements, with very few limitations.

The specifications include the major features from our top-of-the-range BioPlus model, making it the ideal choice when the ability to maintain stable temperatures is decisive in a purchasing decision. The functional design ensures easy, ergonomically correct access to the storage space.

- Access port
- Self-closing door with key lock
- Voltage-free contact
- Acoustic and visual door alarm
- E-sensor
- Acoustic and visual temperature alarms
- Alarm recording

Exterior: White lacquered steel or stainless steel

Interior:** Aluminium/stainless steel or stainless steel

** White version comes with internal sides in aluminium and bottom and backside of door in stainless steel. Stainless versions comes as all stainless



BioMidi		* Min. height without base/max. height with highest base			
Model	RR +2/+20 °C	RF -25/-5 °C	EF -40/-5 °C	Ext. W x D x H*	Volume Litres / Cubic feet
425	•	•		600 x 731 x 1980/2000	Gross: 425/15.0 Net: 303/10.7
425 EF			•	622 x 731 x 1980/2000	Gross: 425/15.0 Net: 303/10.7
625	•	•		815 x 731 x 1980/2000	Gross: 625/ 22.1 Net: 451/15.9

- 1 The user interface consists of large, easy to use buttons and an easy-to-read LED display. This helps make sure that adjusting cabinet settings is always a rapid and straightforward procedure.
- 2 Draught shield that minimizes cold loss when the outer door is opened, is standard on the EF425 and optional extras to the other BioMidi variants.
- 3 Mounting the compressor in the base of the cabinet puts the interior space at an ideal working height, ensuring users better ergonomic positions and comfortable working heights.



BioCompact II

- II 3G Ex ec nC ic IIB T6 Gc (RR 210/310/410/610)
- II 3G Ex ec nC ic IIB T3 Gc (RF 210/310/410)
- II 3G Ex ec nC ic IIB T2 Gc (RF 610)
- II 3G Ex ec nC ic IIB T5 Gc (RR 310)



DTI 22ATEX0251X (210/310/410)



- ① Gram MPC 4.6 control unit with temperature and door alarms and voltage-free contact.
- ② Extra sensor for providing a temperature reference within the storage is standard on all BioCompact II variants.
- ③ The refrigeration system based on a finned tube evaporator provides even better temperature stability and results in a storage place with no cold walls that can damage any delicate items stored in the cabinet.



This is a compact refrigerator or freezer cabinet for a wide range of biostorage purposes where the prime focus is dependability.

The BioCompact II provides you with significantly better performance than any other cabinets in this segment for storing ordinary biomaterial under stable conditions. The small footprint of this design also makes it the perfect biostorage unit for use in confined spaces.

- Access port
 - Self-closing door with keylock
 - Voltage-free contact
 - Acoustic and visual door alarm
 - E-sensor
 - Acoustic and visual temperature alarms
 - Alarm recording
 - Glass door with integrated LED lighting
- Exterior:** White lacquered steel or stainless steel finish
Interior: PS lining
 610: PS lining with wall rails in stainless steel

BioCompact II		* Min. height without base/max. height with highest base			
Model	RR: +2/+20 °C	RF: -25/-5 °C	RR/RF: +2/+20 °C -25/-5 °C	Ext. W x D x H*	Volume Litres / Cubic feet
210	•	•		595 x 640 x 801/1001	Gross: 125/4.4 Net: 104/3.7
210/210			•	595 x 640 x 1602/1802	Gross: 250/8.8 Net: 208/7.4
310	•	•		595 x 640 x 1190/1390	Gross: 218/7.8 Net: 189/6.7
410	•	•		595 x 640 x 1776/1976	Gross: 346/12.3 Net: 312/11.1
610	•	•		695 x 875 x 1874/2075	Gross: 583/20.6 Net: 419/16.7
310/210			•	595 x 640 x 1991/2191	Gross: 343/12.2 Net: 293/10.4



BIOBASIC

- II 3G Ex ec nC ic IIB T6 Gc (RR 210/310/410)
- II 3G Ex ec nC ic IIB T3 Gc (RF 210/310/410)
- II 3G Ex ec nC ic IIB T5 Gc (RR 600)
- II 3G Ex ec nC ic IIB T1 Gc (RF 600)



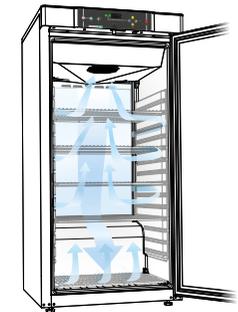
DTI 22ATEX0252X (210/310/410)
DTI 22ATEX0250X (600)



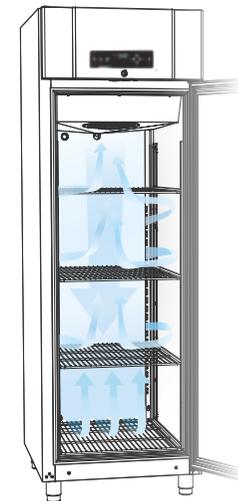
The BIOBASIC range offers cost-effective biostorage solutions for a host of applications. With temperature alarms, internal and external ATEX, no cold walls and a user-friendly interface, the BIOBASIC range provides an exceptional selection of features in a very small package. With four sizes to choose from, the BIOBASIC range is well suited for use in confined spaces where performance, features and value are paramount.

- Access port
 - Self-closing door with keylock
 - Voltage-free contact
 - Acoustic and visual temperature alarms
 - Acoustic and visual door alarm
 - RR 210/310/410 also available with glass door
- Exterior:** White lacquered steel
Interior: White/PS, Model 600 stainless steel

BIOBASIC				
Model	RR: +2/+15 °C	RF: -25/-5 °C	W x D x H (mm)	Volume Litres / Cubic feet
210	•	•	595 x 640 x 831	Gross: 125/4.4 Net: 104/3.7
310	•	•	595 x 640 x 1220	Gross: 218/7.8 Net: 189/6.7
410	•	•	595 x 640 x 1876	Gross: 346/12.3 Net: 312/11.1
600	•	•	700 x 895 x 2125	Gross: 610/21.5 Net: 536/18.9



BIOBASIC 310

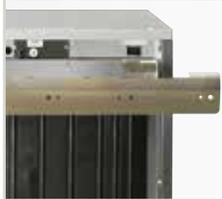


BIOBASIC 600

- 1 The BIOBASIC control unit is specifically developed for users of BIOBASIC. Among its many features are acoustic/visual temperature and door alarms, voltage free contact (NO/NC) for remote temperature and power failure alarm, monitoring and read out of highest and lowest temperature, controller key pad lock, off set function.
- 2 With the finned tube evaporator placed in the top separated from the storage compartment there is no cold walls in the cabinet. Utilizing clever design and quality components, the BIOBASIC range manages to offer cost-effective performance on a small footprint.



BioLine options



Wall mounting

BioCompact II 210, 310 and 410 models can also be wall-mounted, to save floor space and for easy cleaning.



Legs

Adjustable stainless steel legs are the ideal choice for mounting a stationary refrigerator securely and safely. You can also choose to have the refrigerator prepared for mounting on a plinth. Both options are included in the Gram BioLine product range at no extra charge.



Wheels

A cabinet with wheels provides you with a bio-storage unit you can move around. For an even more maneuverable cabinet, you can upgrade from the standard option of two lockable castors and two fixed wheels to the option with four swivel castors.



Chart recorder

The temperature chart recorder is for independent measurement of cabinet temperature. Sensor can be placed in separate liquid container. The recorder is powered by a 1.5 volt battery to ensure recording even in the event of a power failure.



Low-temperature protection

Low-temperature thermostat preventing the refrigeration system from operating, in the unlikely event, the temperature falls below the set minimum. This feature cannot be combined with an external compressor.



Dual refrigeration circuit

This additional safety feature ensures that the temperature inside the cabinet is maintained even in the unlikely event of a compressor failure. There are two independent refrigeration circuits that operate side-by-side under normal circumstances. However, each is designed to safely maintain the desired cabinet temperature on its own.



Reference container

Container in which the properties of the biomaterial can be simulated. The E-sensor or the customer's own sensor can be placed in the reference container.



DIN Kit

Fitted with the appropriate DIN kit, relevant cabinets will be compliant with DIN 58345.



Pedal door opener

Practical pedal door opener for hand-free opening of the cabinet. Standard for BioPlus and optional available for BioCompact II 410/610.



Aluminium drawers

Specially built, multi-purpose drawers provide a high degree of flexibility for your biostorage. The drawers can be divided horizontally and vertically according to your specific needs and changing daily requirements.



Wire shelves

The high-quality standard wire shelves are constructed of robust stainless steel for long life. Plastic-coated wire shelves are available for general use.



ABS drawers

The ABS drawer has been designed from the ground up to meet the most stringent requirements. The drawer is one-piece injection molded for maximum rigidity and seamless smooth surfaces. Available for BioCompact II 210, 310 and 410 models.



Wire basket

Large wire basket mounted in u-shaped rails fitted into the walls of the cabinet. Ideal for storing multiple items, with easy access. Available for BioCompact II 210, 310 and 410 models.



Stainless drawers 30/40 kg

High-quality, heavy-duty drawers made of stainless steel are well-suited for use in particularly demanding environments. These drawers are available with a traditional stainless steel front. Equipped with telescopic drawer rails.



Glass doors

These make checking and access both quicker and easier. Fitted with an energy-saving, extra-insulated double layer of glass, the glass door is optional equipment for the refrigerators in the Gram BioLine range.



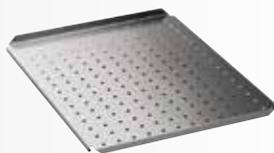
Stainless dividers

Divider system for when additional vertically compartments are needed in 30 and 40 kg stainless steel drawers.



Draught shields

Set of 3 extra inner doors that minimise cold loss when the outer cabinet door is opened. Each of the 3 inner doors can be opened separately for access to the storage compartment. Optional for BioPlus and BioMidi, and standard equipment on EF versions.



Stainless perforated shelves

The perforated shelves provide a flat surface that helps ensure stable storage. The special design ensures exceptional strength, making them ideal for bearing heavy items. These shelves are highly resistant to a wide range of substances.



Designed and manufactured in Denmark

Gram Scientific develops, manufactures and markets the complete Gram BioLine range for customers in Europe, the Middle East and Asia, operating from our administration and manufacturing facilities in Denmark.







Biostorage you can depend on

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Gram Scientific ApS is one of the world's prime manufacturers of high-performance refrigeration and freezer equipment for discerning professional users. We develop, manufacture and market this technology for customers in Europe, the Middle East and Asia, operating from our administration and manufacturing facilities in Denmark. This is all backed by branches in the UK, Germany, the Netherlands, France, Sweden and Norway and distributors throughout the world.

www.gram-bioline.com

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