



From Azenta Life Sciences

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

Medical Refrigeration





Special purpose refrigerators and deep freezers, storage and transport systems for Laboratory, Medicine, Research, Biotechnology and Life Sciences.

### Saving lives through reliable and innovative technology

#### UNDERSTANDING THE NEEDS OF MEDICAL PROFESSIONALS REQUIRES A CONSTANT DIALOGUE.

The medical challenges our partners and clients face on the ground can be overwhelming. By continuously engaging with them and gathering insights through dialogue and exchange, we are able to understand their evolving needs. As a key global player in the sector of medical technology, B Medical Systems is committed in delivering highly specialized and cutting-edge devices that always exceed expectations.

#### DESIGNING RELIABLE MEDICAL DEVICES IS AT THE HEART OF OUR INNOVATION PROCESS.

We feel deeply connected to the international community of healthcare professionals and use optimized industrial processes to offer reliable products and services that help develop a relationship of trust. By managing the design, manufacturing, distribution and after-sales elements, we adopt a lifecycle approach and can ensure the Total Cost of Ownership of our products is as low as possible.

#### PUTTING PEOPLE FIRST STARTS WITHIN OUR ORGANIZATION.

We take a customer-oriented approach in everything we do, and are guided by our values and high standards. Our team of highly skilled professionals share our desire to excel and stay ahead of the game in the field of technological innovation. As an organization, our core aim is to save lives through reliable and innovative technology.

#### STATE-OF-THE-ART TECHNOLOGY FOR THE EXACTING NEEDS OF THE MEDICAL WORLD.

B Medical Systems provides solutions for the safe and risk-free storage, transport and handling of products and temperature-sensitive preparations in appropriate conditions. Our state-of-the-art technology covers the entire spectrum of the specific, exacting demands of the market – across hospitals, laboratories, pharmacies, research centres, universities and industry.



#### SUMMARY

- B Medical Systems Safety Standards For technical reliability and environmental friendliness
- Medical Refrigerators & Freezers For any cooling need in laboratories, research, biotechnology
- °B Connected, DCU & Electronics For optimum control and protection of your preparations

## A complete line for any solution

### Medical Refrigeration









# Safety Standards **B Medical Systems**

**The Safety Standards developed by B Medical Systems** define certain significant technical features of a product. These ensure the safe storage of the preparations as well as setting the highest standards of safety for the user.

LINE	PREMIUM LINE	
		B Medical Systems Electronics
		B Medical Systems digital display
		B Medical Systems 7" full touchscreen display
		Safety door lock (with 2 keys) and key-operated power switch ON/OFF (with 2 keys)
		Power indicator light and digital temperature indicator (display: 0.1 digits)
		Controlled fan cooling system for constant temperature and even temperature distribution across the entire refrigerating chamber [not applicable for F models (Precision Line) & U range]
		Automatic switch-off of the evaporator fans when the door opens [not applicable for F models (Precision Line) & U range]
		Self-contained alarm system with integrated battery takes over the alarm function and temperature value measurements in case of system failure for at least 48 hours
		Acoustic and visual alarm signal in case of temperature alarm and system failure
		The alarm history function on the electronic stores all the relevant values during a temperature alarm, such as: min., max. and average temperature [+ alarm duration for Premium Line models]
		Remote transmission alarm signal (via potential-free contact) in case of temperature alarm (change-over contact)
		Safety thermostat prevents dropping of the temperature below +2°C [not applicable for F/U ranges]
		Door opening alarm (visual / acoustic)
		Designed and tested for climatic class SN (ambient temperature range +10°C to +32°C)
		Designed and tested for climatic class SN / T (ambient temperature range +10°C to +43°C)
		Interior made from stainless steel
		Internal LED lighting [not applicable for F/U ranges]
		Additional remote transmission alarm signal (via potential-free contact) in case of system failure (change-over contact)
		Smooth castors for optimum flexibility of movement
	$\bigcirc$	External water cooling [not applicable for L/P ranges]
	$\bigcirc$	Ambient temperature sensor
		Ethernet interface for the visualization of all operating and control functions (hardware and software settings) via B Connected monitoring software on a peripheral device (computer)
	$\bigcirc$	°B Connected - Universal software for the monitoring of refrigeration devices, including the acquisition, recording and visualization of temperature data
0		DCU (Data Communication Unit) - Hardware module monitoring all operating conditions and passing them through to a central database – via local network (in combination with °B Connected)
	<b>(</b> F)	Integrated remote temperature monitoring device (RTMD), offering real-time worldwide remote monitoring, data access over WEB and GPS position



#### **PRECISION LINE** | MODELS L/P55, L/P/F130-290-380 & LF/PF260

#### **PREMIUM LINE** | MODELS L/P/F400-500-700-900 & U201-401-501-701-901



#### Integrated multifunction monitoring electronics

Integrated B Medical Systems multifunction electronics; with easy access in the door level; offers alarms, central alarm system, set point security, battery backup, full display and many other control features; compatible with "B Connected solution for data monitoring and recording.



#### Rotomoulded or steel models

- Models L/P55-130-290-380, F130 & LF/PF260:
   One piece material cabinet with a lifetime warranty for zero corrosion, highest quality polypropylene for better insulation and no sharp edges to provide easier maintenance and cleaning
- Models F290-380: Steel cabinets feature lower overall energy consumption, superior temperature distribution and a highly stable air circulation within the cabinet, remarkable sealing between gaskets, long autonomy and holdover times, and an exceptional life-span for the compressor
- Smart ergonomy Easier and safer handling because of heavier components placed at the bottom



#### Innovation for more reliability

In conformity with national and international guidelines, regulations for Medical Devices offering reliability, efficiency and safety at an optimal price.

#### Exclusive integrated electronics handle bar

All functionalities are easily accessible:

- Digital control with full functionalities -B Medical Systems 7" full touchscreen display integrated at optimal level in the door handle with pre-installed connection allowing exclusive "B Connected monitoring functionalities
- Open/close Heavy duty door lock mechanism





#### High quality materials

High quality coating, certified medical devices quality and antibacterial, high quality steel for better longevity and easy hygiene control.



#### • Versatile modularity

Excellent storage capacity and modularity -Large choice of shelves and drawers offering modularity for every need.

## Laboratory Refrigerators

### B Medical Systems | L Range

9 models • Volume 52 > 949 L • Set temperature +5°C • Climate class SN | SN/T • Compliant to DIN 13277 | ÖNORM K 2040 | MDR (EU) 2017/745, Class I

Laboratory Refrigerators are devices intended for the safe storage of samples, specimens, cultures and other laboratory preparations at cold temperatures **between +4°C and +15°C** with multiple safety features developed as a result of 40 years of expertise in refrigeration technology.



#### Integrated multifunction monitoring electronics

Integrated B Medical Systems multifunction electronics; with easy access in the door level; offers alarms, central alarm system, set point security, battery backup, full display and many other control features; compatible with °B Connected solution for data monitoring and recording.



#### Lifetime warranty corrosion-free cabinet

- One piece material cabinet with a lifetime warranty for zero corrosion, highest quality polypropylene for better insulation and no sharp edges to provide easier maintenance and cleaning
- Smart ergonomy Easier and safer handling because of heavier components placed at the bottom



#### Exclusive integrated electronics handle bar

All functionalities are easily accessible:







#### • High quality materials

High quality coating, certified medical devices quality and antibacterial, high quality steel for better longevity and easy hygiene control.



#### Versatile modularity

Excellent storage capacity and modularity - Large choice of shelves and drawers offering modularity for every need.



#### High storage capacity

High storage per square meter in terms of net volume, with a very versatile inner volume utility due to multiple user friendly rails allowing modularity.















**LF260** 

Laboratory	
Refrigerator	S

Gross / Net volume (I) External dimensions  $H \times W \times D$  (mm) 52 / 45 670 x 495 x 575

**L55** 

121 / 106 830 x 595 x 695 297 / 269 1670 x 595 x 695 362 / 329 1980 x 595 x 695 1650 x 595 x 695

R | 121 / 106 F | 121 / 106











L400

L500

L700

949 / 773

Gross / Net volume (I)		
External dimensions H x W x D (mm)		

478 / 390 1988 x 699 x 1039

634 / 517 1988 x 845 x 1039

792 / 645 1988 x 992 x 1039

1988 x 1139 x 1039

## Pharmacy Refrigerators

### B Medical Systems | P Range

9 models • Volume 52 > 949 L • Set temperature +5°C • Climate class SN | SN/T • Compliant to DIN 13277 | ÖNORM K 2040 | MDR (EU) 2017/745, Class I

Pharmacy Refrigerators are devices intended for the safe storage of pharmaceuticals, e.g. medications or live virus vaccines, at cold temperatures between +4°C and +15°C with multiple controls and warning safety features developed as a result of 40 years of expertise in refrigeration technology.



#### Integrated multifunction monitoring electronics

Integrated B Medical Systems multifunction electronics; with easy access in the door level; offers alarms, central alarm system, set point security, battery backup, full display and many other control features; compatible with °B Connected solution for data monitoring and recording.



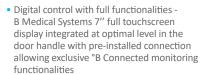
#### Lifetime warranty corrosion-free cabinet

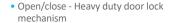
- One piece material cabinet with a lifetime warranty for zero corrosion, highest quality polypropylene for better insulation and no sharp edges to provide easier maintenance and cleaning
- Smart ergonomy Easier and safer handling because of heavier components placed at the bottom



#### Exclusive integrated electronics handle bar

All functionalities are easily accessible:







#### • High quality materials

High quality coating, certified medical devices quality and antibacterial, high quality steel for better longevity and easy hygiene control.



#### Versatile modularity

Excellent storage capacity and modularity - Large choice of shelves and drawers offering modularity for every need.



#### High storage capacity

High storage per square meter in terms of net volume, with a very versatile inner volume utility due to multiple user friendly rails allowing modularity.

#### Highest insulation value (organic glass door)

4-layer (Precision Line) and 5-layer (Premium Line) PMMA organic glass offering highest insulation, combined with reduced weight reducing efforts to close door and constraints on hinges, offering better longevity.







## Pharmacy



**P55** 









PF260

Refrigerators

Gross / Net volume (I)

External dimensions H x W x D (mm)

Gross / Net volume (I)	52 / 45
External dimensions H x W x D (mm)	670 x 495 x 575

121 / 106 830 x 595 x 695 297 / 269 1670 x 595 x 695

362 / 329

1980 x 595 x 695

R | 121 / 106 F | 121 / 106 1650 x 595 x 695









**P900** 

P400

478 / 390 1988 x 699 x 1039

**P500** 

634 / 517

1988 x 845 x 1039

P700 792 / 645

73

949 /	77

## Laboratory Freezers

### B Medical Systems | F Range

7 models • Volume 121 > 949 L • Set temperature -41°C / -32°C • Climate class SN | SN/T • Compliant to DIN 13277 | MDR (EU) 2017/745, Class |



#### Integrated multifunction monitoring electronics

Integrated B Medical Systems multifunction electronics; with easy access in the door level; offers alarms, central alarm system, set point security, battery backup, full display and many other control features; compatible with °B Connected solution for data monitoring and recording.



#### • Rotomoulded or steel models

• Model F130: One piece material cabinet with a lifetime warranty for zero corrosion, highest quality polypropylene for better insulation and no sharp edges to provide easier maintenance and cleaning

• Models F290-380: Steel cabinets feature lower overall energy consumption, superior temperature distribution and a highly stable air circulation within the cabinet, remarkable sealing between gaskets, long autonomy and holdover times, and an exceptional life-span for the

• Smart ergonomy - Easier and safer handling because of heavier components placed at the bottom



#### High storage capacity

High storage per square meter in terms of net volume, with a very versatile inner volume utility due to multiple user friendly rails allowing modularity.



#### Exclusive integrated electronics handle bar

All functionalities are easily accessible:



Laboratory freezers are devices intended

for the safe storage samples, specimens, live virus

vaccines, cultures, test materials, chemicals, reagents, and other laboratory preparations at temperatures below -20°C developed as a result of 40 years of expertise in refrigeration technology.





#### • High quality materials

High quality coating, certified medical devices quality and antibacterial, high quality steel for better longevity and easy hygiene control.



#### Versatile modularity

Excellent storage capacity and modularity - Large choice of shelves and drawers offering modularity for every need.

#### Special features for easy deicing and defrosting

- Evaporator offering better performance than market average, resulting in lesser ice formation with automatic defrost
- Insulated inner doors for significantly lower loss of cooling when open



Laboratory Freezers







F380

Gross / Net volume (I)	121 / 106	296 / 281	338 / 318
External dimensions H x W x D (mm)	830 x 595 x 695	1750 x 603 x 650	1950 x 603 x 650











F400

**F500** 

F900

Gross / Net volume (I)	478 / 387	634 / 514	791 / 641	949 / 768
External dimensions H x W x D (mm)	1988 x 699 x 1039	1988 x 845 x 1039	1988 x 992 x 1039	1988 x 1139 x 1039

## **Ultra-Low Freezers**

### B Medical Systems | U Range

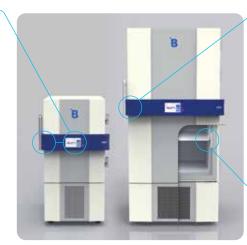
5 models • Volume 232 > 949 L • Set temperature -82°C • Climate class SN/T • Compliant to DIN 13277 | MDR (EU) 2017/745, Class IIa



#### Exclusive integrated electronics handle bar

All functionalities are easily accessible:

- Digital control with full functionalities -B Medical Systems 7" full touchscreen display integrated at optimal level in the door handle with pre-installed connection allowing exclusive °B Connected monitoring functionalities
  - Open/close Heavy duty door lock mechanism



#### Special features

- Integrated pressure release valve in the door permitting faster opening in one move, and offering easy access for cleaning
- Insulated inner doors for significantly lower loss of cooling when open
- Full compatibility of inner modules and rails, no need to buy new racks, you can keep racks previously used in different models







#### Versatile modularity

Excellent storage capacity and modularity -Large choice of racks offering modularity for every need.



High quality coating, certified medical devices quality and antibacterial, high quality steel for better longevity and easy hygiene control.



Ultra-low freezers are devices intended for the storage of blood components and blood plasma, human cells, tissues, live virus vaccines, and other laboratory samples at ultra-low temperatures down to -86°C. The devices include an integrated alarm system that warns against unexpected temperature excursions and power failures. U models reflect the highest and most uncompromising requirements with state-ofthe-art technology and economy. The cooling system is optimally designed with respect to energy consumption as well as to the development of waste heat and noise. Standard factory setpoint is -82°C, temperature is adjustable from -86°C to -20°C.



### **Ultra-Low** Freezers



**U201** 

Gross / Net volume (I)		232 / 217	
Storage	Cryoboxes (models H50)	170 (with 6 Cryo-Racks)	
capacity	Vials	15500 (2ml)	
External dimensions H x W x D (mm)		1293 x 699 x 1039	



#### **INTEGRATED PRESSURE RELEASE VALVE**

This aluminium die cast handle offers a strong and ergonomic feeling that allows the user to open the door with one hand. Inside the freezers, the vacuum will be automatically removed through a release valve, located in the door, in order to allow easy cleaning.

The handle is equipped with an electric lock that can be deactivated through the user interface.













U401

**U501** 

**U701** 

**U901** 

Gross / Net volume (I)		478 / 454	634 / 602	791 / 751	949 / 900
Storage capacity	Cryoboxes (models H50)	345 (with 9 Large Cryo-Racks and 3 Cryo-Racks)	460 (with 12 Large Cryo-Racks and 4 Cryo-Racks)	575 (with 15 Large Cryo-Racks and 5 Cryo-Racks)	690 (with 18 Large Cryo-Racks and 6 Cryo-Racks)
	Vials	34500 (2ml)	46000 (2ml)	57500 (2ml)	69000 (2ml)
External dimensions H x W x D (mm)		1988 x 699 x 1039	1988 x 845 x 1039	1988 x 992 x 1039	1988 x 1139 x 1039

## Full functionalities at a glance

### B Medical Systems | Electronics

**PRECISION LINE** | Multifunctional electronics with digital display and easy access, in the door handle; compatible with °B Connected monitoring solution.



#### • Key power switch • O = OFF / I = ON

- To switch the unit on, turn the key switch to position "I". The green power LED lights up
- After the self-check, the temperature inside the device is displayed



#### Digital display

During normal operation the display shows:

- Left-hand side: current time and internal temperature displayed in °C (Celsius) or °F (Fahrenheit) in increments of 0.1°
  - Right-hand side: the maximum and minimum inside temperature



#### Function buttons

• UP / DOWN buttons: navigation within the parameters and modification of their values



 ENTER button: use the ENTER-key to confirm the actual selection. This applies to the parameter value. The change of a parameter only becomes effective when confirmed



 MUTE / BACK button: in case of an alarm, the acoustic alarm can be muted for a specified time. In Parameter-mode the same key acts as "BACK-button" to go one step back



 LIGHT button: allows to switch on or off the interior light of the device without opening the door (for L and P ranges)





## • Acoustic and visual alarm signal

When an alarm occurs, the red alarm LED lights up and an acoustic signal sounds. The corresponding alarm message appears on the display with the inside measured temperature. If several alarms occur simultaneously, the messages will be shown alternately.



A USB port is available for data export only. Measured values of the display sensor are stored for at least 30 days (ring buffer) together with a time stamp.



#### The B Medical Systems Electronics

offers a wide range of adjustment and diagnostic functionalities as well as additional protection / warning operations (via external alarm operations, histories and individual display signals).

**PREMIUM LINE** | Multifunction electronics with 7" full touchscreen display, integrated at optimal level in the door handle with pre-installed connection allowing exclusive °B Connected monitoring functionalities.



#### Power switch OFF / ON

- To switch on press the ON/OFF button for 1 second. The green LED will light up
  - · Switch off protected by password. The door will automatically unlock before powering down



#### Touchscreen 7" full display

During normal operation the display shows:

- At the top: current voltage, current time, defrosting (for F range), gasket heater (for F and U ranges) and login status (user level)
- Left-hand side: temperature of the regulation sensor (displaying this temperature can be disabled through the settings) and internal temperature displayed in °C (Celsius) or °F (Fahrenheit) in increments of 0.1°
- Right-hand side: touch buttons to access door unlock, clean, menu, alarm mute and message functions



O USB port & SD card slot

#### Acoustic and visual alarm signal

When an alarm occurs, the red alarm LED lights up and an acoustic signal sounds. The corresponding alarm message appears on the display together with the inside measured temperature. If several alarms occur simultaneously, the messages will be shown alternately.



#### Keycard reader

Login / Unlock using an NFC card

#### Touch buttons

- DOOR UNLOCK button: unlocks the door of the device
- CLEAN button: the cleaning button allows the user to disable the touch capability of the screen for a short period of time in order to clean the screen. This button is replaced by the logout button when user is logged in
- MENU button: allows access to the menu screen
- ALARM MUTE button: deactivates the acoustic alarm for a predefined period of time
- ACTIVE ALARMS AND WARNINGS button: during a warning or alarm situation, the color of this button and the corresponding level will change. Information on an active alarm and warning is accessible by pressing the message button













## Optimum control and protection

## B Medical Systems | °B Connected & DCU



#### **°B CONNECTED | MONITORING SOFTWARE**

Universal software for the monitoring of refrigeration devices, including the acquisition, recording and visualization of temperature data.



- Unique monitoring software for the full range of Blood Management Solutions and Medical Refrigeration products
- Web-based interfaces for computers and mobile devices
- Modern design for simple and intuitive use
- Graphic display of temperature curves
- Integrated event and activity history of appliances' components
- Data recording on centralized database for long-term archiving
- Easy setting of specific alarm, via email or SMS alerts
- Generation of reports compiling crucial data and activities
- Temperature and detailed device data export for third-party software
- Important cost advantage compared to a traditional circular chart recorder and its spare parts
- REST API to access raw data directly from the database in read-only mode

#### **KEY BENEFITS:**

- Unique interface for the monitoring of the full range of refrigeration devices
- Centralized database providing data access to entire customer network







 Optimized design for mobile and touch compatible devices Support of multiple

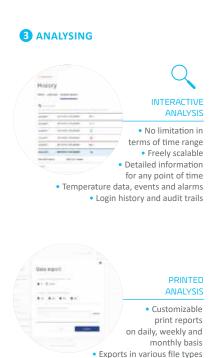
• Real-time data: Current temperatures, set point, upper and lower limit, door state, compressor runtime · Log data: Events, alarms within date/time, event type, description of the event. Event and alarm confirmation function

· Parameter settings of each device: Factory settings, real-time clock, language, firmware version, RS485 address, IP address

- > Complete & legally safe documentation of temperature data
- > Comprehensive applications and diagnostic functionalities







Standardized format

#### DCU | DATA COMMUNICATION UNIT (PRECISION LINE)

## Hardware module monitoring all operating conditions and passing them through to a central database – via local network.



- Interface connection of B Medical Systems appliances to an existing network
- Graphical user interface displaying temperature and configurating devices and alarms easily
- Direct connection to Ethernet and serial bus RS485
- Digital in/out (programmable and customer-specific use)
- Recording and storing appliance-relevant data
- Integrated USB port allowing to export archived data
- The DCU combined with the °B Connected software replaces the paper temperature recorder
- All data are recorded and saved in the internal storage of the DCU and backed up in °B Connected database if connected
- Several additional self-sufficient temperature sensors (up to 4 PT1000) may be connected
- Humidity sensor input (4-20 mA)

#### **KEY BENEFITS:**

- Central system collecting relevant temperature data of the appliances and their respective operating conditions
- A number of connection abilities allowing flexible upgrades for individual projects



Safe global blood management:

transportation, processing and storage

from collection to transfusion,



around the world

Reliable solutions for safe vaccination



State-of-the-art technology for the exacting needs of the medical world

Our Global Expertise







#### After Sales support and service

We strive to provide you with the highest standards of service; not only through our selected distributors and partners for all your maintenance and service but also our second line trouble shooting and after sales service. This factory-based group of engineers is there to help our partners and yourself to get the best solution for your cold storage needs.



From Azenta Life Sciences

#### SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

B Medical Systems (formerly Dometic Medical Systems) has more than 40 years' experience in the medical refrigeration sector.

The company, formerly known as Electrolux Medical Systems, was founded in 1979 when the World Health Organization approached Electrolux in Vianden, Luxembourg, to create a solution for the safe storage and transport of vaccines around the world. In 2001, Electrolux Medical Systems became part of the Dometic Group, and was renamed Dometic Medical Systems. In 2015 after MBO, the company was named B Medical Systems. In 2022 Azenta Life Sciences acquired B Medical Systems.

#### B Medical Systems S.à r.l.

17, op der Hei L - 9809 Hosingen, Luxembourg

Tel.: (+352) 92 07 31-1 Fax: (+352) 92 07 31-300 info@bmedicalsystems.com













Since 2019 B Medical Systems has been committed to the UN Global Compact corporate responsibility initiative and its principles in the areas of human rights, labour, the environment and anti-corruption.

#### Luxembourg, in the heart of Europe

