



Laboratory Refrigerators

B Medical Systems | L Range

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.

Compliant to DIN 13221 | DIN 58345 | ÖNORM K 2040 | Medical Device according to MDR (EU) 2017/745, Class I or 21CFR Part 862.2050, Class I













SAVING LIVES
THROUGH RELIABLE
AND INNOVATIVE
TECHNOLOGY

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.

| PRECISION 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 model LF260 (Freezer compartment)] |
| | | Automatic switch-off of the evaporator fans when the door opens [not applicable for model LF260 (Freezer compartment)] |
| | | 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., average temperature and alarm duration |
| | | 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 |
| | | 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 |
| | | 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 | 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) |
| | | °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) |

MODELS L55-130-290-380 & LF260 | PRECISION LINE

Laboratory Refrigerators

B Medical Systems | L Range

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.

9 models • Volume 52 > 949 L • Set temperature +5°C • Climate class SN | SN/T • Compliant to DIN 13221 | DIN 58345 | ÖNORM K 2040 | MDR (EU) 2017/745, Class I

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



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



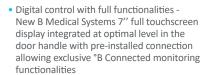
High storage capacity

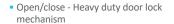
High storage per square meter in terms of net volume, with a very versatile inner volume utility due to multiple user friendly rails allowing modularity.



Exclusive integrated electronics handle bar (Patent pending)

All functionalities are easily accessible:







MODELS L400-500-700-900 | PREMIUM LINE

O High quality materials

New high quality coating, certified medical devices quality and antibacterial, high quality steel for better longevity and easy hygiene



Versatile modularity

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



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.







Technical DataGeneral features











| | | L | .55 | L | 130 | L | 290 | L: | 380 | LF | 260 | Refrigerator & Freezer con | nbined |
|---|---|-----------------------------|---------------|------------------------|-----------|------------------|------------------|------------------|------------------|-----------------|----------|-------------------------------|-----------|
| Gro | ss / Net volume (I) | 52 / 45 | | 121 / 106 | | 297 / 269 | | 362 / 329 | | R 121 / 106 | | F 121 / 106 | |
| Set | temperature (preset) | | | | | | +5°C | | | | | -32°C | |
| Set temperature (setting range) can be adjusted in steps of 0.1°C | | | +4°C to +15°C | | | | | | | | | -32°C to -20°C | |
| Pre. | set cold / warm alarm limit | | | | | +3°(| C / +7°C | | | | | -37°C / -27 | °C |
| Hol | d over time | 1.3 h (+5°C t | to +10°C) | 1.5 h (+5°C t | to +10°C) | 1.0 h (+5°C t | o +10°C) | 0.9 h (+5°C t | o +10°C) | 1.5 h (+5°C t | o +10°C) | 0.7 h (-32°C | to -23°C) |
| Clin | nate class (ambient temperature range) | | | | | SN (+10 | °C to +32°C) | | | | | | |
| Def | rosting technique | Natural | | | | | | | | | Manual | | |
| Ref | rigerant type | | | | | R | 600a | | | | | R290 | |
| Ext | ernal dimensions H x W x D (mm) | 670 x 495 x 575 830 x 595 x | | x 695 1670 x 595 x 695 | | 5 x 695 | 1980 x 595 x 695 | | 1650 x 595 x 695 | | | | |
| Inn | er dimensions H x W x D (mm) | 470 x 375 | x 350 | 630 x 475 x 470 | | 1470 x 475 x 470 | | 1780 x 475 x 470 | | 630 x 475 x 470 | | 630 x 475 x 470 | |
| Net | weight with standard equipment (kg) | 38 | 37 | 59 | 57 | 94 | 92 | 107 | 104 | 117 | 116 | | |
| | Supply voltage (V) | 220-240 | 115-127 | 220-240 | 115-127 | 220-240 | 115-127 | 220-240 | 115-127 | 220-240 | 115-127 | 220-240 | 115-127 |
| | Frequency (Hz) | 50 / 60 | 60 | 50 / 60 | 60 | 50 / 60 | 60 | 50 / 60 | 60 | 50 / 60 | 60 | 50 / 60 | 60 |
| / Sar | Power (W) | 100 | 100 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 300 | 360 |
| | Energy consumption (kWh/24h) | 0.7 / 0.8 | 0.8 | 1.0 / 1.0 | 0.8 | 1.8 / 1.9 | 1.9 | 1.8 / 1.9 | 1.8 | 1.0 / 1.0 | 0.8 | 2.8 / 2.9 | 3.1 |
| E | Heat emission (Kcal/h) | 25 | 29 | 36 | 29 | 64 | 68 | 64 | 64 | 36 | 29 | 100 | 111 |
| | Compressor running time (%) | 26 | 22 | 17 | 18 | 28 | 35 | 28 | 35 | 17 | 18 | 51 | 50 |
| | Noise level (dB(A)) (at 1m height & 1m distance) | 35 / 36 | 37 | 35 / 36 | 38 | 38 / 40 | 39 | 40 | 38 | 35 / 36 | 38 | 45 / 47 | 47 |



Technical DataGeneral features









| | | L | 400 | L! | 500 | L | 700 | L9 | 900 | | |
|--------------|--|-------------------------------------|---------|--------------------|------------|-------------------|---------|--------------------|---------|--|--|
| Gro | oss / Net volume (I) | 478 / 390 634 / 517 792 / 645 949 / | | | | | | | 9 / 773 | | |
| Set | temperature (preset) | | | | - | +5°C | | | | | |
| | temperature (setting range) be adjusted in steps of 0.1°C | +4°C to +15°C | | | | | | | | | |
| Pre | set cold / warm alarm limit | | | | +3°(| C / +7°C | | | | | |
| Но | d over time | | | | 1.6 h (+ | -5°C to +10°C) | | | | | |
| Clir | mate class (ambient temperature range) | | | | SN / T (+1 | 0°C to +43°C) | | | | | |
| Dej | rosting technique | technique Natural | | | | | | | | | |
| Ref | rigerant type | R600a | | | | | | | | | |
| Ext | ernal 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 | | | |
| Inn | er dimensions H x W x D (mm) | 1173 x 447 | 7 x 743 | 3 1173 x 593 x 743 | | 1173x 740 x 743 | | 1173 x 887 x 743 | | | |
| Ne | t weight with standard equipment (kg) | 194 | | 215 | | 237 | | 259 | | | |
| | Supply voltage (V) | 220-240 | 115-127 | 220-240 | 115-127 | 220-240 | 115-127 | 220-240 | 115-127 | | |
| | Frequency (Hz) | 50 / 60 | 60 | 50 / 60 | 60 | 50 / 60 | 60 | 50 / 60 | 60 | | |
| Sav | Power (W) | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | | |
| Energy Savei | Energy consumption (kWh/24h) | 1.4 / 1.4 | 1.3 | 1.4 / 1.4 | 1.3 | 1.4 / 1.5 | 1.3 | 1.5 / 1.5 | 1.3 | | |
| | Heat emission (Kcal/h) | 29 | 27 | 33 | 28 | 32 | 30 | 35 | 29 | | |
| | Compressor running time (%) | 22 | 22 | 25 | 23 | 24 | 25 | 25 | 24 | | |
| | Noise level (dB(A)) (at 1m height & 1m distance) | 46 / 49 | 52 | 47 / 51 | 50 | 50 / 51 | 46 | 47 / 47 | 46 | | |



Technical DataSpecifications







| | _ ^ | | | _ | | | |
|----|-----|---|-----|-----------|------|----|---|
| L5 | | _ | | • | | _ | |
| | | - | LJ. | CT | | 40 | u |
| | | | | | | | |

L290-380

L400-500-700-900

| Regulation se | ensor | NTC, at 0°C ± 0.3°C | | PT1000, at 0°C ± 0.1°C | | | | | |
|--|--|--|-----------------------|--------------------------------------|--|--|--|--|--|
| Display senso in reference body corning 200-5CST | / 100 ml DOW | NTC, at 0°C ± 0.3°C | | PT1000, at 0°C ± 0.1°C | | | | | |
| Accu data / fu panel when sy | unction time of the control ystem failure | 12 V - 2.3 AH / 48h | | 12 V - 10.0 AH / 48h | | | | | |
| Relative humi | idity at +32°C | ≤ 75% | | | | | | | |
| Door insulation | on (polyurethane) | 82 mm PU | | 65-82 mm PU | | | | | |
| Cabinet insulo | ation (polyurethane) | 60-65 mm PU | | 77-82 mm PU | | | | | |
| | Inner body | Polypropylene (copolyme | · UV) | Stainless steel (1.4301) | | | | | |
| | Outer body | Polypropylene (copolyme | · UV) | DX51D + Z100 coated | | | | | |
| 0.4 | Inner door | Polypropylene (copolymer UV) | Aluminium | Stainless steel (1.4301) | | | | | |
| Material | Outer door | Polypropylene (copolyme | · UV) | DX51D + Z100 coated | | | | | |
| | Drawer | Polycarbonate, transpar | ent | - | | | | | |
| | Shelf | Wire DIN177, PA11 coated | | | | | | | |
| European Me | edical Device Regulation | | MDR (EU) 2017/745, Cl | aSS (models: 220-240 V - 50/60 Hz) | | | | | |
| EMC directive | 2 | | 2014 / 30 / EU (mo | odels: 220-240 V - 50/60 Hz) | | | | | |
| Low voltage a | directive | | 2014 / 35 / EU (m | odels: 220-240 V - 50/60 Hz) | | | | | |
| FDA regulatio | on Medical Device | 21CFR Part 862.2050, Class (models: 115-127 V - 60 Hz) | | | | | | | |
| cCSAus certifi | icate | | Yes (models: 1 | 15-127 V - 60 Hz) | | | | | |
| Energy Star co | ertificate | - | | Yes (models: 115-127 V - 60 Hz) | | | | | |
| GMP - Clean i | room classification | Class ISO 6 / EC GMP I | 3 | Class ISO 5 / EC GMP A | | | | | |
| | | | | | | | | | |









ORGANIC



Equipment

General

| | | L55 | L130 | L290 | L380 | LF260 | L400 | L500 | L700 | L900 |
|---------------------------------------|---|-----|----------|------------|------------------------|------------------------|-----------------------|------------------------|------------------------|------------------------|
| B Medical | Digital display | • | • | • | • | 2 | - | - | - | - |
| Systems Electronics | 7" full touchscreen display | - | - | - | - | - | • | • | • | • |
| rgonomic har ppen/close - heavy | ndle duty door lock mechanism | - | - | - | - | - | • | • | • | • |
| Organic glass of or quick check / pro | door e-selection of the refrigerator's content | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Internal LED lig | ghting | • | • | • | • | • | • | • | • | • |
| Ethernet interf | face | - | - | - | - | - | • | • | • | • |
| B Connected - | Monitoring Software | 0 | 0 | \bigcirc | \bigcirc | \bigcirc | $\overline{\bigcirc}$ | $\overline{\bigcirc}$ | \bigcirc | \bigcirc |
| DCU - Data Col (in combination wit | mmunication Unit h °B Connected) | 0 | 0 | 0 | 0 | 0 | - | - | - | - |
| Temperature co | hart recorder e form of a circular chart recorder) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ambient tempe | erature sensor | - | - | - | - | - | 0 | 0 | $\overline{\bigcirc}$ | 0 |
| Potential-free of a case of system fa | | • | • | • | • | • | • | • | • | • |
| Integrated por installed by custom | t for external sensor ^{ner)} | • | • | • | • | 2 | • | • | • | • |
| Rollers | | - | 2 | • 2 | 2 | 2 | - | - | - | - |
| Smooth castor. | s with stabilizers | - | | | | | 4 | 4 | 4 | • 4 |
| Door hinge Rig | ıht Left | | | | \bullet \bigcirc | \bullet \bigcirc | | \bullet \bigcirc | \bullet \bigcirc | \bullet \bigcirc |









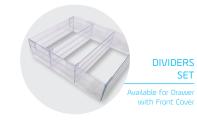
2 versions:



ST-DRAWER Available with or without Front Cover

Equipment Internal storage

| | | L55 | L130 | L290 | L380 | LF260 | L400 | L500 | L700 | L900 |
|---|--|----------|--------------|---|------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Drawer with Fro | ont Cover | <u> </u> | <u> </u> | <u></u> | <u></u> 06 | ● 2 ○1 | - | - | - | - |
| Drawer without | Front Cover | <u>3</u> | <u>3</u> | <u></u> | <u></u> | <u>3</u> | - | - | - | - |
| Bottom Drawe | er | • 1 | 1 | 1 | 1 | 2 | - | - | - | - |
| Wire Shelf | | • 1 | • 2 | 6 5 | • 7 | • 2 | 6 5 | 5 | 5 | 5 |
| ST-Drawer with | n Front Cover | - | - | - | - | - | <u></u> | <u></u> | <u></u> | <u></u> |
| ST-Drawer with | nout Front Cover | - | - | 13 (max. per unit) 13 (max. per unit) 13 (max. per unit) 13 (max. per unit) | | 13 (max. per unit) | 13 (max. per unit) | | | |
| Accessories | | | | | | | | | | |
| | H 35 mm or H 100 mm) andling and storage management | <u></u> | <u></u> | <u></u> | <u></u> 6 | <u></u> 3 | - | - | - | - |
| S-Rack (H 100 x | W 113 x D 638 mm) | - | - | - | - | - | 15 (max. per unit) | 20 (max. per unit) | 25 (max. per unit) | 30 (max. per unit) |
| CT De el | with Wire Shelf | - | - | - | - | - | 2 (max. per tray) | 3 (max. per tray) | 3 (max. per tray) | 4 (max. per tray) |
| ST-Rack (H 95 x W 134 x D 648 mm) | with ST-Drawer | - | - | - | - | - | 2 (max. per tray) | 2 (max. per tray) | 3 (max. per tray) | 4 (max. per tray) |
| | with ST-Shelf | - | - | - | - | - | 2 (max. per tray) | 3 (max. per tray) | 4 (max. per tray) | 4 (max. per tray) |
| ST-Cover for Wi | ire Shelf | - | - | - | - | - | 13 (max. per unit) |

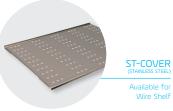




SET

S-RACK





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



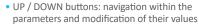
O Digital display

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





 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





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.



HAL

3.8°C

The new 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, 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







settings, real-time clock, language, firmware

version, RS485 address, IP address

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







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







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

Safe global blood management: Reliab from collection to transfusion, aroun transportation, processing and storage

Reliable solutions for safe vaccination around the 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.



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. Having established a legitimate reputation in the medical equipment industry, the company has also become a global leader in vaccine cold chain.

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

