L
RANGE

Laboratory Refrigerators

B Medical Systems | L Range

For the safe storage of samples, specimens, cultures and other laboratory preparations being subject to cold chain and temperature sensitivity

> according to DIN 58345 | ÖNORM K 2040

9 MODELS

+5°C TEMPERATURE

52 L > 895 L VOLUME

SN CLIMATE CLASS

MEDICAL DEVICE Certified 93/42/EEC

°B medical systems

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

Medical Refrigeration

Safety Standards
B Medical Systems

DIN 58345 | ÖNORM K 2040 | CE | CSA c US | GMP REINRAUMKLASSIFIZIERUNG CLASSIFICATION DES SALLES BLANCHES CLEAN ROOM CLASSIFICATION | EXCEN CERTIFIED ISO 14001 | TÜV SÜD ISO 13485 | TÜV SÜD ISO 9001
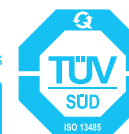
The Safety Standards developed by B Medical Systems define certain significant technical features of a product. These ensure the safe storage of the preparations as well as setting the highest standards of safety for the user.

PRECISION LINE	PREMIUM LINE	
●	●	B Medical Systems Electronics
●		B Medical Systems digital display
	●	B Medical Systems 4,3'' digital color display with capacitive buttons
	○	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
●	●	Automatic switch-off of the evaporator fans when the door opens
●	●	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
●	●	Door opening alarm (visual / acoustic)
●	●	Designed and tested for climatic class SN (ambient temperature range +10°C to +32°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
	○	Ambient temperature sensor
○	●	°B Connected - Universal software for the monitoring of refrigeration devices, including the acquisition, recording and visualization of temperature data
○		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)
	●	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)

● Standard   ○ Optional

Subject to change without prior notice.

Laboratory Refrigerators

B Medical Systems | L Range

Laboratory refrigerators 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 over 35 years of expertise in refrigeration technology.

9 models • Volume **52 > 895 L** • Set temperature **+5°C** • Climate class **SN** • According to **DIN 58345 | ÖNORM K 2040**

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

MODELS L 55-130-290-380 & LF 260 | PRECISION LINE

⊙ Integrated multi-function monitoring electronics

Integrated B Medical Systems multi-function 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 monitored solution for data monitoring and recording.
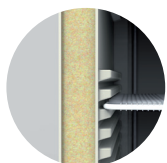
⊙ Lifetime warranty corrosion-free cabinet

• 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.
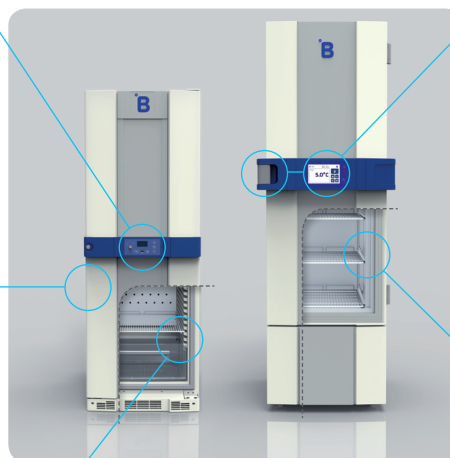
⊙ Exclusive integrated electronics handle bar *(Patent pending)*

All functionalities are easily accessible:

• Digital control with full functionalities - Standard multifunction digital sensitive 4.3'' panel integrated at optimal level in the door handle with full commands and connections, or optional full 7'' touchscreen with pre-installed connection allowing exclusive °B Connected monitoring functionalities

• Open/close - Heavy duty door lock mechanism

⊙ High quality materials

New 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.
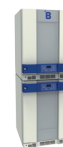
MODELS L 400-500-700-900 | PREMIUM LINE

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

L RANGE

Technical Data
General features

	L 55	L 130	L 290	L 380	LF 260	Refrigerator & Freezer combined
Gross / Net volume (l)	52 / 45	121 / 106	297 / 269	362 / 329	R I 121 / 106	F I 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
Temperature cold / warm alarm limit	+3°C / +7°C					-37°C / -27°C
Hold over time (+5°C to +10°C)	1 h 15	1 h 27	59 min.	54 min.	1 h 27	42 min.
Climate class (ambient temperature range)	SN (+10°C to +32°C)					
Defrosting technique	Natural					Manual (for freezer)
Refrigerant type	R600a					R290
External dimensions H x W x D (mm)	670 x 495 x 575	830 x 595 x 695	1670 x 595 x 695	1980 x 595 x 695	1660 x 595 x 695	
Inner dimensions H x W x D (mm)	470 x 375 x 350	630 x 475 x 470	1470 x 475 x 470	1790 x 475 x 470	630 x 475 x 470	630 x 475 x 470
Net weight with standard equipment (kg)						

Energy Saver		L 55		L 130		L 290		L 380		LF 260			
	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
	Power (W)	42	47	110	89	120	85	120	93	110	89	168	209
	Energy consumption (kWh/24h)	0.38 / 0.45	0.38	0.89 / 1.13	0.61	0.96 / 1.27	1.06	0.93 / 1.26	1.10	0.89 / 1.13	0.61	1.35 / 1.28	1.98
	Heat emission (Kcal/h)	9	8	29	18	29	22	37	20	29	18	53	65
	Compressor running time (%)	25	20	31	24	28	30	36	25	31	24	37	36
	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

All values were measured at +25°C ambient temperature and without load (with inertial mass).
Subject to change without prior notice. Some of the accessories shown in the pictures are optional.

L RANGE

Technical Data
General features

	L 400	L 500	L 700	L 900
Gross / Net volume (l)	451 / 384	598 / 510	747 / 636	895 / 763
Set temperature (preset)	+5°C			
Set temperature (setting range) *can be adjusted in steps of 0.1°C*	+4°C to +15°C			
Temperature cold / warm alarm limit	+2°C / +8°C			
Hold over time (+5°C to +10°C)				
Climate class (ambient temperature range)	SN (+10°C to +32°C)			
Defrosting technique	Natural			
Refrigerant type	R600a			
External dimensions H x W x D (mm)	1988 x 697 x 1035	1988 x 850 x 1035	1988 x 982 x 1035	1988 x 1140 x 1035
Inner dimensions H x W x D (mm)				
Net weight with standard equipment (kg)				

Release date to be confirmed

		L 400		L 500		L 700		L 900	
Energy Saver	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
	Power (W)								
	Energy consumption (kWh/24h)								
	Heat emission (Kcal/h)								
	Compressor running time (%)								
	Noise level (dB(A)) *(at 1m height & 1m distance)*								

All values were measured at +25°C ambient temperature and without load (with inertial mass).
Subject to change without prior notice. Some of the accessories shown in the pictures are optional.

**SAVING LIVES** THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

L
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Technical Data
Specifications

		L 55-130 & LF 260	L 290-380	L 400-500-700-900
Regulation sensor Precision (from -80°C to +180°C) ± 0.3°C		NTC		
Display sensor Precision (from -80°C to +180°C) ± 0.3°C in reference body / 100 ml DOW corning 200-5CST (Silicon Oil)		NTC		
Accu data / function time of the control panel when system failure		12 V - 2.3 AH / 48h		
Relative humidity at +32°C		≤ 75%		
Door insulation (polyurethane)		80 mm PU		
Casing insulation (polyurethane)		60 mm PU		
Material	Inner / Outer body	Polypropylene (copolymer UV)		
	Inner door	Polypropylene (copolymer UV)	Aluminium	
	Outer door	Polypropylene (copolymer UV)		
	Drawer	Polycarbonate, transparent		
	Shelf	Wire DIN177, PA11 coated		
European Medical Device Directive		93 / 42 / EEC, Class I (models: 220-240 V - 50/60 Hz)		
EMC directive		2014 / 30 / CE (models: 220-240 V - 50/60 Hz)		
Low voltage directive		2014 / 35 / CE (models: 220-240 V - 50/60 Hz)		
FDA regulation		Class I medical devices acc. to 21CFR Part 864.9700 (models: 115-127 V - 60 Hz)		
cCSAus certificate		Yes (models: 115-127 V - 60 Hz)		
GMP - Clean room classification		Class ISO 6 / EC GMP B		

L RANGE

DRAWER
3 versions:
– top
– with Front Cover
– bottom
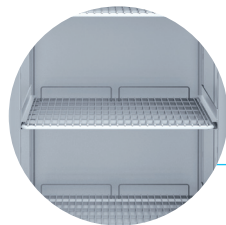
WIRE SHELF

ST-SHELF
(STAINLESS STEEL)

Equipment
Standard & optional

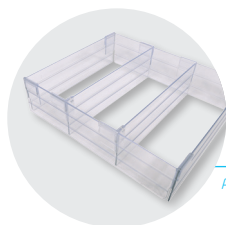|		L 55	L 130	L 290	L 380	LF 260	L 400	L 500	L 700	L 900
B Medical Systems Electronics	Digital display	●	●	●	●	●2	-	-	-	-
	4.3'' digital color display	-	-	-	-	-	●	●	●	●
	7'' full touchscreen display	-	-	-	-	-	○	○	○	○
Interior equipment	Top | Bottom Drawer	- | ●1	- | ●1	- | ●1	- | ●1	●1 | ●2	-	-	-	-
	Drawer with Front Cover	○1	○1	○≤5	○≤6	●1 | ○1	-	-	-	-
	Wire Shelf	●1	●2	●5	●7	●2	●5	●5	●5	●5
	ST-Shelf	-	-	-	-	-	○	○	○	○
Internal LED lighting		●	●	●	●	●	●	●	●	●
°B Connected - Monitoring Software		○	○	○	○	○	●	●	●	●
DCU - Data Communication Unit (in combination with °B Connected)		○	○	○	○	○	-	-	-	-
Ethernet interface		-	-	-	-	-	●	●	●	●
Ambient temperature sensor		-	-	-	-	-	○	○	○	○
Potential-free alarm contact in case of system failure		●	●	●	●	●	●	●	●	●
Integrated port for external sensor (installed by customer)		●	●	●	●	●2	●	●	●	●
Rollers | Smooth castors with stabilizers		- | -	●2 | -	●2 | -	●2 | -	●2 | -	- | ●4	- | ●4	- | ●4	- | ●4
Door hinge Right | Left		● | ○	● | ○	● | ○	● | ○	● | ○	● | ○	● | ○	● | ○	● | ○
Wooden packaging for ocean transport / export		○	○	○	○	○	○	○	○	○

● Standard   ○ Optional   - Not available

Subject to change without prior notice.

L RANGE

DIVIDERS SET

Available for Drawer with Front Cover
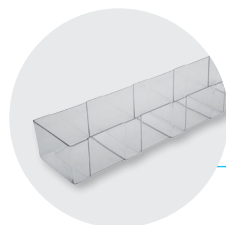
S-RACK
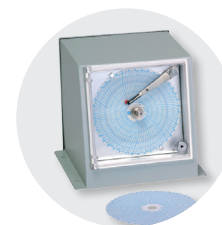
TEMPERATURE CHART RECORDER

(sample image)

Accessories
Standard & optional

	L 55	L 130	L 290	L 380	LF 260	L 400	L 500	L 700	L 900
Dividers Set (H 35 mm or H 100 mm) *to facilitate the handling and storage management*	◯ 1	◯ 1	◯ ≤ 5	◯ ≤ 6	◯ ≤ 2	-	-	-	-
S-Rack (H 100 x W 113 x D 638 mm)	-	-	-	-	-	◯	◯	◯	◯
Temperature chart recorder *pre mounted (in the form of a circular chart recorder)*	◯	◯	◯	◯	◯	◯	◯	◯	◯

● Standard ◯ Optional - Not available

Subject to change without prior notice.

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

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 monitored solution.
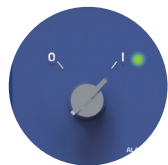
○ Key power switch
O = OFF / I = ON

- 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

○ 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 alternately with the measured inside temperature. If several alarms occur simultaneously, the messages will be shown alternately.
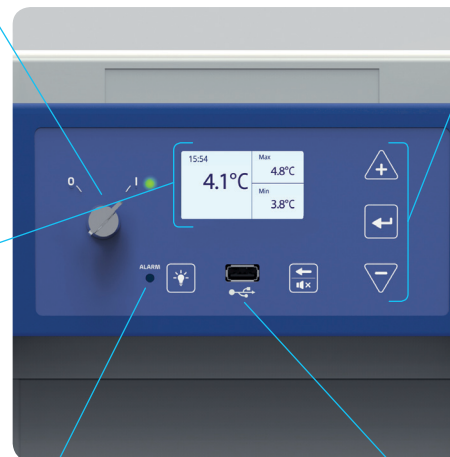
○ Function buttons

- 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 a "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

○ USB-port

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.

PREMIUM LINE | Multi-function electronics with 4.3'' digital color display and capacitive buttons, integrated at optimal level in the door handle with full commands and connections.

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

Digital color 4,3'' display

During normal operation the display shows:

• At the top: current voltage and current time

• Left-hand side: internal temperature displayed in °C (Celsius) or °F (Fahrenheit) in increments of 0.1°

• Right-hand side: temperature of the regulation sensor. Displaying this temperature can be disabled through the settings

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 measured inside temperature. If several alarms occur simultaneously, the messages will be shown alternately.

Capacitive buttons

• ARROW buttons: select screen items with the arrow buttons. In parameter editing mode, the arrow buttons are used to change values

• ENTER button: activates the currently selected item

• BACK button: goes one level upwards in the menu tree structure. It also serves as "escape" button

• DOOR UNLOCK button: unlocks the door of the device

• MENU button: opens the menu screen

• ALARM MUTE button: deactivates the acoustic alarm for a predefined period of time

Discover the ultimate control experience with the new B Medical Systems 7'' full touchscreen display

More confortable, more functionalities, no compromise!

Available as option

B MEDICAL SYSTEMS ELECTRONICS — Full functionalities at a glance

Subject to change without prior notice.

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

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 forwarding, via email or SMS
- Generation of reports compiling crucial data and activities
- Temperature and detailed device data export for third-party software
- Important price 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
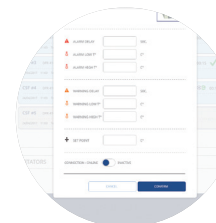
1 CONFIGURATION

USER MANAGEMENT
- Password login
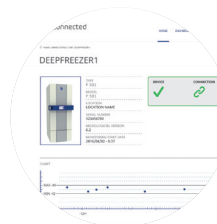- Access right

DEVICE SETTINGS
- Device information
- Device & user configuration

ALARM PROFILE
- Parameters of the alarm profile (day, hour, minute)
- Alarm management

2 DISPLAYING

DETAILED DISPLAY
- Optimised design for mobile and touch compatible devices
- Support of multiple languages
- 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
- Batch management: Read in of plasma bags with a barcode scanner
- Movement state and door control of Agitator devices
- Parameter settings of each device: Factory settings, real time clock, language, firmware version, RS485 address, IP address
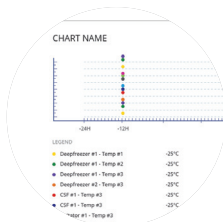
°B Connected & DCU offer a highly flexible system that is adaptable to specific customer requirements
> Complete & legally safe documentation of temperature data
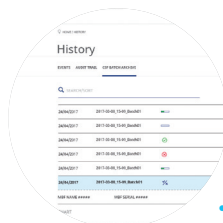> Comprehensive applications and diagnostic possibilities

DCU | DATA COMMUNICATION UNIT (PRECISION LINE)
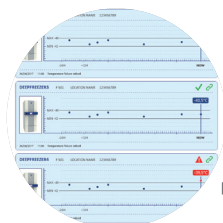
REAL TIME GRAPHICS

- Graphic temperature progress (in real time)
- Adjustable time axis
- Offline navigation

③ ANALYSING

History

EVENTS   ALERT TRAIL   LOT BATCH ACCESS

INTERACTIVE ANALYSIS

- No limitation in terms of time range
- Freely scalable
- Detailed information for any point of time
- Temperature data, events and alarms
- Login history and audit trails

CONTROL CENTER

CHART NAME

LEGEND
- Deepfreezer #1 - Temp #1   -25°C
- Deepfreezer #1 - Temp #2   -25°C
- Deepfreezer #1 - Temp #3   -25°C
- Deepfreezer #2 - Temp #3   -25°C
- CSF #1 - Temp #3   -25°C
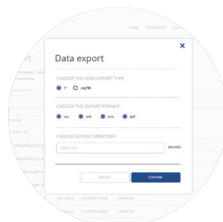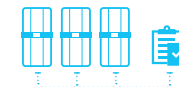- CSF #1 - Temp #3   -25°C
- ~tor #1 - Temp #3

Overview (Control Monitor) of all monitored appliances:
- Information regarding status, appliance name, location, connection, upper and lower limit, current temperature, events / alarms
- Dashboard to combine several temperature measurements in one single graph

Data export

CHOOSE THE DATA EXPORT TYPE

CHOOSE THE EXPORT FORMAT

CHOOSE EXPORT DIRECTORY

PRINTED ANALYSIS

- Customisable print reports on daily, weekly and monthly basis
- Exports in various file types
- Standardised format

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 stored data
- The DCU combined with the °B Connected software replaces the paper temperature recorder
- All data are recorded and save in the internal storage of the DCU and backed up in °B Connected data base 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 facilities allowing flexible upgrades for individual projects

Subject to change without prior notice.

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

°B CONNECTED & DCU
For optimum control and protection of your preparations

Blood Management Solutions

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

Cold Chain

Reliable and innovative solutions for safe vaccination around the world

Medical Refrigeration

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.

B medical systems

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

B Medical Systems (formerly Dometic Medical Systems) has more than 35 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.

Luxembourg, in the heart of Europe

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