

Blood Bank Refrigerators according to DIN 58371

Blood Plasma Freezers according to DIN 58375



1865

Philipp Kirsch establishes the company as a coppersmith firm

1901

Beer cooling cylinders are produced

1927

KIRSCH grows to become an industrial company

1929

Bottled beer refrigerators are manufactured from galvanised sheet steel

1956

First electrical refrigerators are manufactured

1960s

Commercial cooling furniture and bottle refrigerators are manufactured



Patrick Bürkle

The third generation of his family to be employed at KIRSCH

"We have always manufactured with the utmost care in order to guarantee the highest quality. This is what our customers value."

1967

KIRSCH becomes one of the first manufacturer of pharmaceutical refrigerators

1980s

Blood bank refrigerators and blood plasma freezers are manufactured

1990s

Explosion-proof laboratory refrigerators and freezers are developed

2000

Offenburg manufacturing site is modernised and expanded

Today

KIRSCH is the leading quality manufacturer of refrigerators and freezers for the laboratory and health sector

Innovation and quality since 1865.

Trust

Since 1865, we have been synonymous with high-quality products fulfilling the most stringent standards and providing the highest level of reliability. Since then, we have won over your trust through consistent innovation, quality and service. This enabled our company to manage even the more turbulent times in world history. This demonstrates: your trust is the foundation for our long-term success. We will continue to pursue this path on a permanent basis. For example, our excellent product features are certified by independent institutions. You can rely on us!

Temperature stability

Our policy of manufacturing our own housings enables us to optimally coordinate all components of our refrigerators and freezers. This is why we have become a

world leader in temperature stability, which has been confirmed by numerous validations at customer premises. The reason is that we only manufacture products that are proven to fulfill the most stringent requirements.

Sustainability

is a trademark of our products and manufacturing process. All products are designed for a long service life. If one of our products is nearing the end of its service life, our credo is "repair not replace". We maintain a supply of spare parts for many years. This helps to relieve the burden on your budget and on our planet's resources.

Discover our products that are coupled with experience and innovation!



Dr. Jochen Kopitzke
Owner and CEO

Benefit from reliability and efficiency.

Why is it worth investing in KIRSCH refrigerators and freezers? Because we use the experience we have gained worldwide to manufacture refrigerators according to the most stringent quality, functionality and efficiency requirements. Your benefit: systems you can rely on 100% – because we know about the sensitivity of the goods you need to cool.*

Robust housing

Made from rust-proof, galvanised sheet steel with robust, white powder coating.

Thick insulation

Made from environmentally friendly material. Ensures low energy consumption.



Non-polluting and energy efficient through the use of natural and environmentally friendly refrigerants (HFC-free). ECOOL devices have no special installation restrictions regarding the green refrigerant, because the cooling cycle is hermetically and permanently sealed (TÜV-tested safety according to DIN-EN 1127-1:2011).¹⁾

Easy-to-maintain interior container

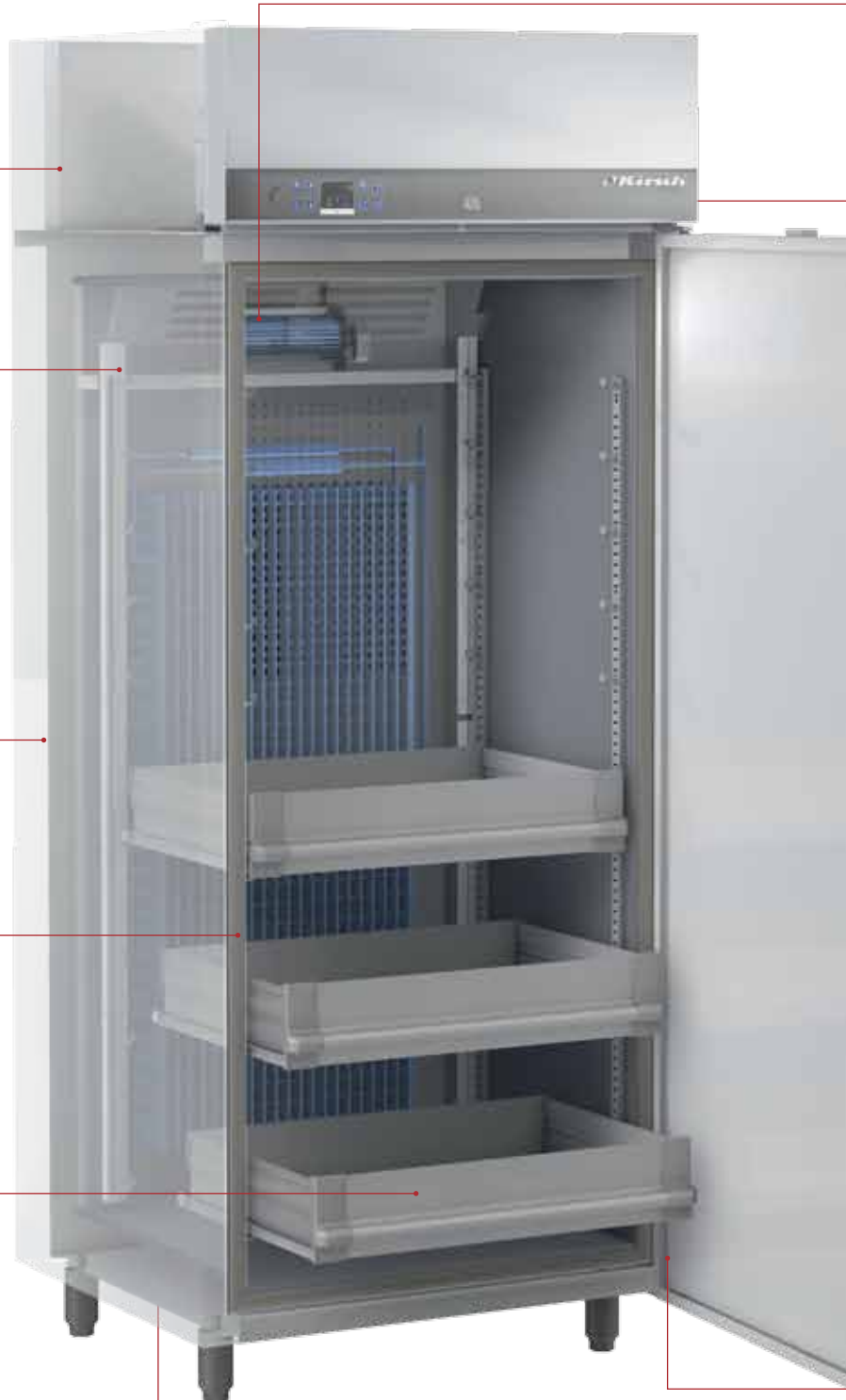
Manufactured from smooth aluminium with protective coating or from impact-resistant plastic with moulded-in shelves.

Flexible handling of wire shelves and drawers

Variable drawer arrangement at 15-mm intervals for refrigerators and freezers with an aluminium interior container.

Automatic defrosting

The unique rapid defrosting by KIRSCH defrosts the device without violating the applicable standards for the storage of blood plasma.



Forced-air cooling

Our devices with forced-air-cooling are equipped with an optimiced air guide concept. This reduces the physically induced temperature drop and enables an almost constant temperature to be maintained.

Low-noise compressor

Reduces the noise level by 10 dB to 40 dB (corresponds to noise level I; sounds perception: whisper).

Self-closing doors

Doors left open accidentally are a thing of the past (except BL-100 and FROSTER-BL-650).

Comfortable access

Now you no longer have to jerk doors open – all you need is one finger! Our devices with aluminium interior which are equipped with a clever opening mechanism makes the fitting even easier.

Custom door hinge

The door hinge on the lockable door is normally on the right-hand side but can be fitted to the left-hand side even after installation. There is no overhang when opening the door. The plastic magnetic seal frame is easy to replace.

Glass doors

Avoid opening the door unnecessarily to inspect the contents (optional).

LED-Illumination

Optimal and energy-efficient interior lightning mounted on top or side wall (optional).

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Company certified by mdc medical device certification GmbH according to DIN EN ISO 9001 and DIN EN ISO 13485

*The model-specific features see the individual product descriptions.

¹⁾ We also provide our devices with Frigen, e.g., for overseas deliveries.

Simple to operate and safe.

Our systems are controlled by microprocessors. This enables exact temperature control using safety devices in the case of malfunctions. The operation is intuitive for a smooth and easy control of our refrigerators and freezers. The model-specific features see the individual product descriptions.

Precise controls

To accurately maintain the temperature that is required by the standard for blood storage.

Automatic defrosting

Defrosting takes place automatically and includes time and temperature monitoring. The condensate evaporates automatically.

Always visible

The easy-to-read LED display informs you about the temperature of the goods to be cooled and the system's operating state.

Temperature documentation

The RS485 interface together with the optional KIRSCH-PC-KIT allows the system to be connected to a PC or network. You can benefit from automated temperature documentation or decentralised monitoring of the system status.

Memory

The minimum/maximum temperature memory captures the lowest and highest value since the re-start or the last time the memory was re-set. The memory starts after the target temperature has been reached for the first time.

Warning functions

Visual and audible alarm signals are used in case of temperature deviations and other malfunctions. Even in the case of a power failure, the monitoring unit remains operational for up to 72 hours on battery power. The potential-free contact can forward alarms to, e.g., your mobile phone* or a control centre.

Antifreeze

The goods to be cooled are protected against the temperature falling below freezing point.

Controls

The electronic, microprocessor-based temperature controller is equipped with a manipulation-protected control centre with membrane keyboard.

Medical products

Our Blood Bank Refrigerators and Blood Plasma Freezers are certificated by the MDC Institute according to DIN ISO 13485 and are medical products.

Blood bank refrigerators manufactured in accordance with DIN 58371

Our Blood Bank Refrigerators fulfill the DIN 58371. This DIN requires for example:

- Operating temperature from +3 °C to +5 °C.
- Ambient temperature at the place of installation from +10 °C to +35 °C.
- Inside temperature must be monitored (e.g. in case of door openings, power failure, loading cycle or defrosting).
- Easy to clean resp. to disinfect inside chamber.
- The racks must be able to withstand a uniform load of 100kg/m².
- Refrigerator doors can be locked.
- Power failure alarm for a minimum of 12 hours.
- Optical and acoustic warning system in case of temperature deviation (upper warning limit +6 °C, lower warning limit +2 °C).
- Potential-free contact for alarm transmission.
- Safety device to prevent the blood bags cooling below +2 °C.

Blood plasma freezers manufactured in accordance with DIN 58375

This DIN requires for example:

- Setpoint of at least -30 °C, in case of automatic defrost system the plasma temperature must be kept not warmer than -27 °C.
- Ambient temperature at the place of installation from +16 °C to +32 °C.
- Inside temperature must be monitored (e.g. in case of door openings, power failure, loading cycle or defrosting).
- Interior is easy to clean and disinfect.
- The racks must be able to withstand a uniform load of 100 kg/m².
- Freezer doors can be locked.
- Power failure alarm.
- Optical and acoustic warning system in case of temperature deviation.
- Potential-free contact for alarm transmission.



Uniform temperature distribution

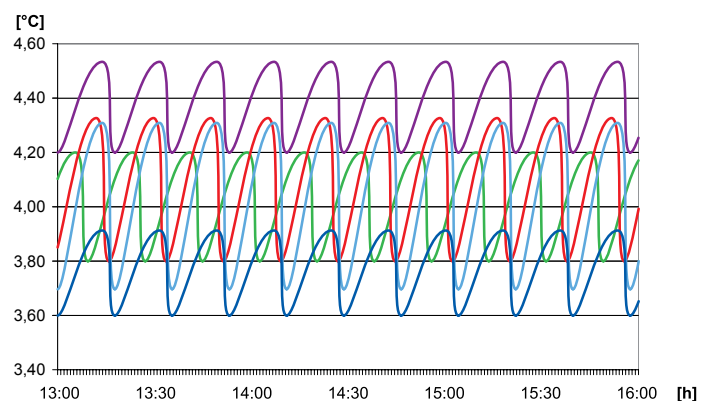
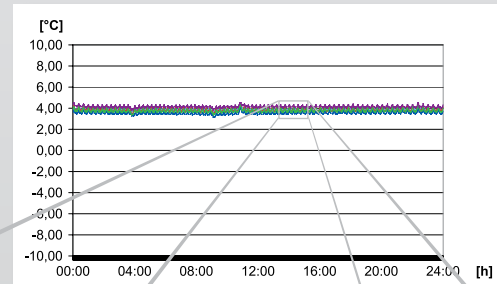
KIRSCH forced-air cooling generates uniform air circulation in the refrigerating room. The set interior temperature is always achieved very quickly – significantly more quickly than with static cooling. Forced-air cooling ensures a unified storage temperature in the entire refrigerating room. The cooling system is optimized for each system and consists of a coordinated combination of blower and air baffle.

Temperature measurement with log file for optimum quality control.

KIRSCH refrigerators and freezers are used in demanding storage settings (e.g., pharmaceutical research, pharmaceutical manufacturing, bioengineering, health, etc.) Temperature measurement with log file enables you to prove that our products fulfill the requirements in real-life applications (validation, such as IQ, OQ, PQ, etc.).

Extensive tests and precise calibration












Before our products are ready for market, they are exposed to the widest range of exterior conditions in the climate chamber to guarantee that the temperature can be maintained even under extreme circumstances. Before we deliver our systems, they undergo precise calibrated during a default test run lasting several hours.



Optimal air-guiding concept

The combination of forced-air cooling and temperature control ensures an almost constant cooling temperature in the entire interior, even in case of changing ambient temperatures.

Interior design overview

		Blood Bank Refrigerators according to DIN 58371					Blood Plasma Freezers according to DIN 58375				
Interior description		BL-100	BL-176	BL-300	BL-520	BL-720	FROSTER-BL-178	FROSTER-BL-180	FROSTER-BL-330	FROSTER-BL-530/-730	FROSTER-BL-650
95 l	Capacity	95 l	170 l	280 l	500 l	700 l	170 l	170 l	300 l	500 l / 700 l	650 l
-32 °C	Temperature setting The temperature is set according to the current DIN standard.	+4 °C	+4 °C	+4 °C	+4 °C	+4 °C	-32 °C	-41 °C	-32 °C	-32 °C	-41 °C
	Ambient temperature Maximum temperature at the refrigerator's or freezer's place of installation. Correct operation is possible up to this temperature.	38 °C	38 °C	38 °C	38 °C	38 °C	32 °C	32 °C	32 °C	32 °C	32 °C
	Forced-air cooling Integrated forced-air cooling reduces temperature reductions caused by the law of physics and ensures a uniform temperature in the entire interior.	●	●	●	●	●	●	●	●	●	●
	RS485 interface for digital temperature documentation. When used together with the optional KIRSCH-PC-KIT, the refrigerator can be connected to a PC or network using this interface.	●	●	●	●	●	●	●	●	●	●
	Potential-free contact for forwarding alarms The potential-free contact allows you to forward alarms. Connect the optional GSM-Module to receive alarms as text messages to your mobile phone. You can also connect the system to the control centre.	●	●	●	●	●	●	●	●	●	●
	Automatic defrosting and condensate evaporation Time and temperature are monitored. Manual defrosting is no longer required. Condensate evaporates automatically.	●	●	●	●	●	●	●	●	●	●
	Number of drawers Standard number of integrated aluminium, stainless steel or plastic drawers with stops.	2	2	4	5	5	3	3	4	5	5
	Capacity per drawer Number of blood bags of 500 ml. FROSTER-BL models: number of blood plasma cartons of 400 ml (19 x 13 x 2.5 cm).	18	25	28	30	45	28	30	30	64 / 96	104
	Gibs For interior containers made from aluminium, gibbs allow a particularly varied use of the interior. Drawers can be positioned as desired every 15 mm.	○	○	●	●	●	○	○	●	●	○
	Undercounter installation Models of this type can be integrated into existing furniture and are therefore particularly space saving. When the system is installed, ensure that the refrigerating machine is sufficiently ventilated.	●	○	○	○	○	○	○	○	○	○
	Comfortable access Now you no longer have to jerk doors open – all you need is one finger!	○	●	●	●	●	●	●	●	●	●
	Self-closing door Doors left open accidentally are a thing of the past.	○	●	●	●	●	●	●	●	●	○

● = Yes, ○ = No

Our product specifics

Cutting edge technology “Made in Germany”. True to our credo of “Quality and Innovation since 1865”, we embrace the consistent evolution of our products. Discover the benefits of our current product design:

Display

The display is positioned at eye-level to make it easier to read and simplify operation.

Glass door

The newly designed glass doors now also offer comfortable access.

Flexible interior features

Equipment of refrigerators and freezers according to your needs: whether additional drawers, shelves, wire baskets or condensation containers – configure your individual device.



BL-100



BL-520

BL-520

Low-noise compressor

Our KIRSCH low-noise compressor reduces the noise level by 10 dB to 40 dB (corresponds to noise level I; sounds perception: whisper).

Self-closing door

Doors left open accidentally are a thing of the past. (Except BL-100, Froster-BL-650).

Controls

The modified symbols and colour scheme make the system even more intuitive to operate.

Control screen

Thanks to a new structure, it is easier to clean and promotes hygiene.

LED-Illumination

Optimal and energy-efficient interior lighting mounted on top or side wall.

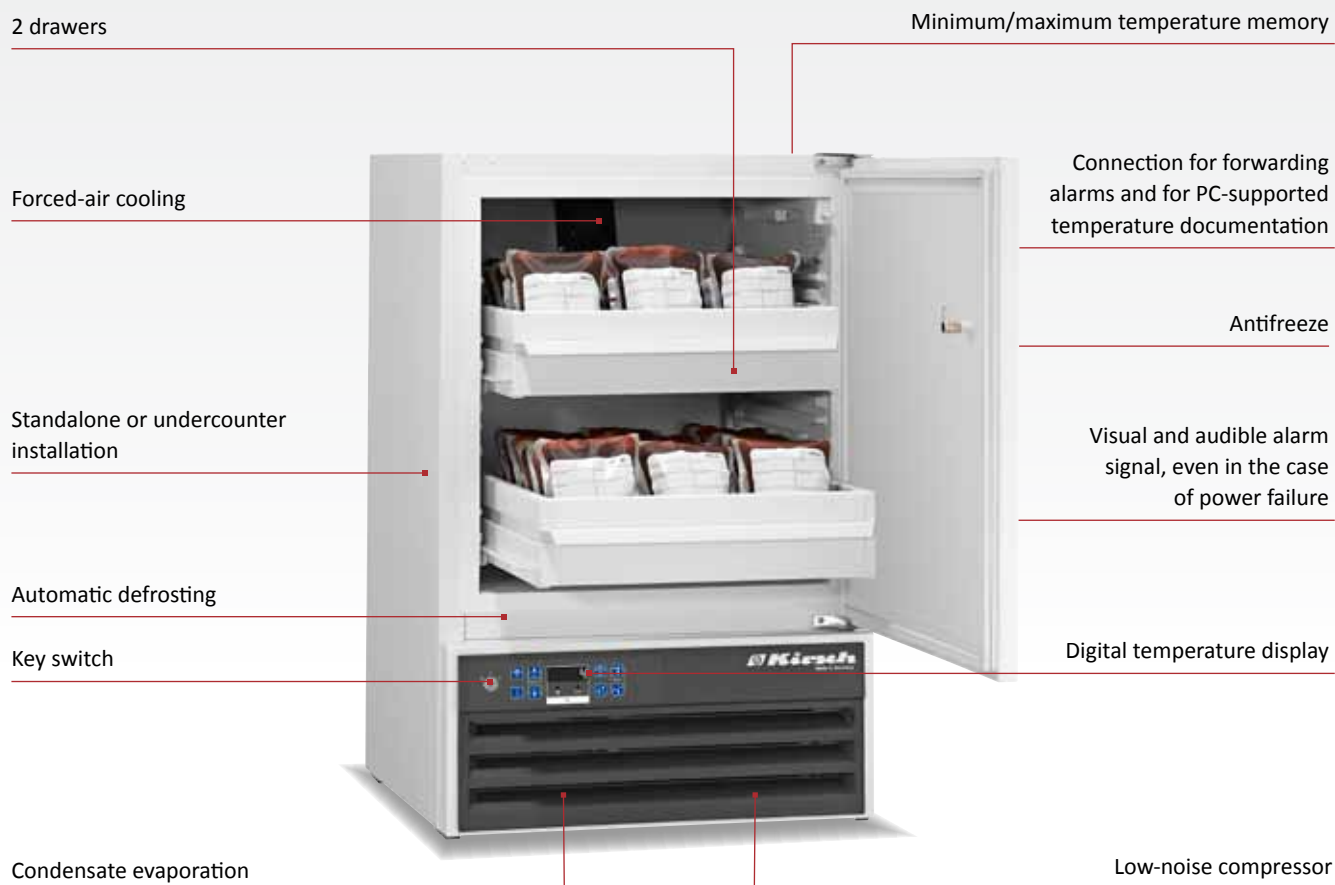


Transportable design

Through the use of steering and fixed castors your cooling unit is mobile so you can easily change the installation site.

Ventilation slits

The plastic slits improve the refrigerating machine's ventilation and are easy to clean. It is now easier to integrate the systems into a clean room or existing furniture.



See www.kirsch-medical.com for the installation drawing.



Low-noise compressor

Reduces noise by 10 dB to 40 dB (corresponds to noise level I; sounds perception: whisper).



Easy-to-clean ventilation slits

Large, smooth lamellas for easy cleaning of the ventilation slits.

BL-100

according to DIN 58371



- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 1.8 m.
- **Adjustable feet** positioned at the front to compensate for uneven floors.
- **Interior** made from impact-resistant, white plastic.
- **Interior consists** of two drawers on telescopic runners with stops. Stacking height: 19 cm. Capacity per drawer approx. 18 blood bags, each 500 ml size.
- **Extra-thick 50-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (by default, see illustration), or the left-hand side, can be retrofitted.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.
- **Automatic defrosting** with time limit and temperature monitoring.
- **Condensate evaporation** in the refrigerating machine room.
- **Key switch** protected control panel against tampering. Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using the floating contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional KIRSCH-PC-KIT).
- **Antifreeze** against sub-zero temperatures.
- **Ventilation-enforced refrigerating machine**, vibration free, hermetically sealed, energy saving, low-noise, easy to service. Inlet air and exhaust air flow through the ventilation slits at the front.
- **Low-noise compressor** reduces noise by 10 dB to 40 dB (corresponds to noise level I; sound perception: whisper).

Specification

Capacity	95 litres
Temperature setting	+4 °C
Voltage	220 – 240 V, 50/60 Hz
Power consumption	160 watts
Normal consumption	0.85 kWh/24 h
Admissible ambient temperature	from +10 °C to +38 °C
Heat emission (max.)	227 watts
Overall dimensions (including distance from wall)	w x d x h = 54 x 53.5 x 82 cm
Interior dimensions	w x d x h = 44 x 43 x 47 cm (usable width 2 cm, usable depth 5 cm, usable height 8 cm less)
Exterior dimensions with door open at 90°	w x d = 54 x 106 cm
Drawer inner dimensions	w x d x h = 37 x 32 x 8,5 cm
Max. load drawer	25 kg
Weight	Net weight 46 kg, gross weight 50 kg

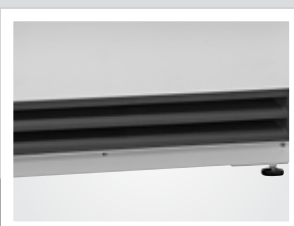
Optional equipment

- **Glass door with lock.**
- **Tabletop** (exterior dimensions: 85 cm in height).
- **Decorative door frame** for attaching the customer's decorative plates (exterior dimensions: 55 cm in width).
- **Door fitting.**
- **Equipped with castors.**
- **Condensate container** can be emptied manually if no condensation is required (e.g., in an operating theatre).
- **GSM-Module** for alarm text message transmission (e.g., to a mobile phone).
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.
 - Mechanical pen-recording thermometer with two waxed paper strips.



Self-closing doors

Doors left open accidentally are a thing of the past. (Except BL-100, FROSTER-BL-650).



Ventilation slits

Improve the refrigerating machine's ventilation and are easy to clean. Simplifies the integration of the devices in a clean room or into furniture.

BL-176

according to DIN 58371



- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 1.8 m.
- **Adjustable feet** to compensate for uneven floors.
- **Interior** made from smooth aluminium with colourless protective coating.
- **Interior consists** of two drawers of aluminium on telescopic runners with stops. Stacking height: 23 cm. Capacity per drawer app. 25 blood bags, each 500 ml size.
- **Extra-thick 70-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Self-closing door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (by default, see illustration), or the left-hand side, can be retrofitted.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.

- **Automatic defrosting** with time limit and temperature monitoring.
- **Condensate evaporation** in the refrigerating machine room.
- **Key switch** protected control panel against tampering. Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using the floating contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional PC-KIT).
- **Antifreeze** against sub-zero temperatures.
- **Statically ventilated refrigerating machine**, vibration free, hermetically sealed, energy saving, low-noise, easy to service.

Specification

Capacity	170 litres
Temperature setting	+4 °C
Voltage	220 – 240 V, 50/60 Hz
Power consumption	155 watts
Normal consumption	1.4 kWh/24 h
Admissible ambient temperature	from +10 °C to +38 °C
Heat emission (max.)	203 watts
Overall dimensions (including distance from wall)	w x d x h = 70 x 77 x 122 cm
Interior dimensions	w x d x h = 55 x 52 x 60 cm (usable width 3 cm, usable depth 9 cm, usable height 13 cm less)
Exterior dimensions with door open at 90°	w x d = 70 x 136 cm
Drawer inner dimensions	w x d x h = 50 x 34 x 10 cm
Max. load drawer	50 kg
Weight	Net weight 79 kg, gross weight 89 kg

Optional equipment

- **LED illumination** mounted at the top.
- **Equipped with castors.**
- **Drawer insert** (set) with 3 adjustable length and 21 cross dividers per drawer.
- **Additional length and cross dividers.**
- **Drawer** made of stainless steel instead of aluminium.
- **Condensate container** can be emptied manually if no condensation is required (e.g., in an operating theatre).
- **GSM-Module** for alarm text message transmission (e.g., to a mobile phone).
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.
 - Mechanical pen-recording thermometer with two waxed paper strips.

Digital temperature display

Antifreeze

Key switch

Minimum/maximum
temperature memory

Forced-air cooling

Visual and audible alarm
signal, even in the case
of power failure

4 drawers

Comfortable access

Automatic defrosting

Connection for forwarding
alarms and for PC-supported
temperature documentation

Condensate evaporation



Storage Overview
of your blood bags in alumi-
num drawers.



Key switch
protected control panel to
avoid switching off the device
by mistake resp. protection
against unauthorised access.

BL-300



according to DIN 58371

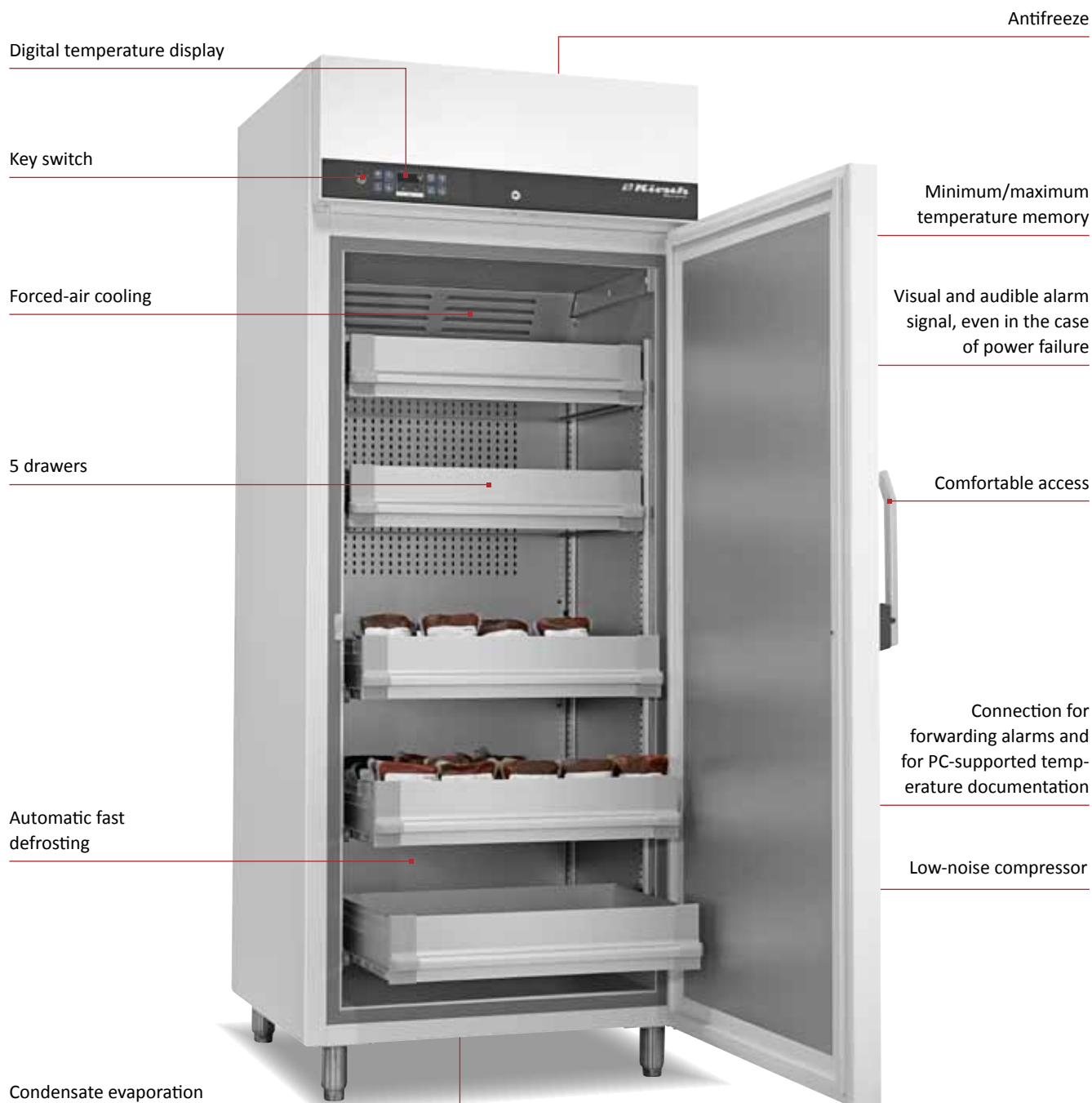
- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 1.8 m.
- **Adjustable feet** positioned at the front to compensate for uneven floors.
- **Interior** made from smooth aluminium with colourless protective coating. Gibs (every 15 mm) for flexible interior arrangement.
- **Interior consists** of four drawers of aluminium, three are height adjustable on telescopic runners with stops. Stacking height: 22cm. Capacity of the top three drawer app. 28 blood bags per drawer and of the lower drawer app. 20 blood bags, each 500 ml size.
- **Extra-thick 55-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Self-closing door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (by default, see illustration), or the left-hand side, can be retrofitted.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.
- **Automatic defrosting** with time limit and temperature monitoring.
- **Condensate evaporation** in the refrigerating machine room.
- **Key switch** protected control panel against tampering. Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using a potential-free contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional PC-KIT).
- **Antifreeze** against sub-zero temperatures.
- **Statically ventilated refrigerating machine**, vibration free, hermetically sealed, energy saving, low-noise, easy to service.

Specification

Capacity	280 litres
Temperature setting	+4 °C
Voltage	220 – 240 V, 50/60 Hz
Power consumption	155 watts
Normal consumption	1.5 kWh/24 h
Admissible ambient temperature	from +10 °C to +38 °C
Heat emission (max.)	203 watts
Exterior dimensions (including door handle and distance from wall)	w x d x h = 67 x 70 x 124 cm
Interior dimensions	w x d x h = 55 x 51 x 100 cm (usable depth above: 5 cm, below: 10 cm less)
Exterior dimensions with door open at 90°	w x d = 67 x 128 cm
Drawer inner dimensions	w x d x h = 49 x 39 x 10 cm
Drawer inner dimensions	w x d x h = 51 x 31 x 10 cm
Max. load drawer	50 kg
Weight	Net weight 82 kg, gross weight 92 kg

Optional equipment

- **Glass door with lock.**
- **LED illumination** mounted at the top.
- **Equipped with castors.**
- **Drawer insert** (set) with 3 adjustable length and 21 cross dividers per drawer.
- **Additional length and cross dividers.**
- **Drawer** made of stainless steel instead of aluminium.
- **Shelf** 52.7 x 39 cm on rails or overlays (max. load: 40 kg).
- **Condensate container** can be emptied manually if no condensation is required (e.g., in an operating theatre).
- **GSM-Module** for alarm text message transmission (e.g., to a mobile phone).
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.
 - Mechanical pen-recording thermometer with two waxed paper strips.



Low-noise compressor

Reduces noise by 10 dB to 40 dB (corresponds to noise level I; sounds perception: whisper).



Perspective

The optional equipment with a glass door and LED illumination avoids unnecessary door opening.

BL-520

according to DIN 58371



- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 3 m.
- **Adjustable feet** to compensate for uneven floors.
- **Interior** made from smooth aluminium with colourless protective coating. Gibs (every 15 mm) for flexible interior arrangement.
- **Interior consists** of five drawers of aluminium, height adjustable on telescopic runners with stops. Stacking height: 23 cm. Capacity per drawer app. 30 blood bags, each 500 ml size.
- **Extra-thick 70-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Self-closing door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (by default, see illustration), or the left-hand side, can be retrofitted.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.
- **Automatic fast defrosting** thanks to time-limited and temperature-monitored reversal of the refrigerant circuit.

- **Condensate evaporates** in stainless steel heated dish beneath the refrigerator floor.
- **Key switch** protected control panel against tampering. Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using a potential-free contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional KIRSCH-PC-KIT).
- **Antifreeze** against sub-zero temperatures.
- **Ventilation-enforced refrigerating machine**, vibration free, hermetically sealed, energy saving, low-noise, easy to service. Inlet air and exhaust air flow through the ventilation slits at the front.
- **Low-noise compressor** reduces noise by 10 dB to 40 dB (corresponds to noise level I; sound perception: whisper).

Specification

Capacity	500 litres
Temperature setting	+4 °C
Voltage	220 – 240 V, 50/60 Hz
Power consumption	316 watts
Normal consumption	2.5 kWh/24 h
Admissible ambient temperature	from +10 °C to +38 °C
Heat emission (max.)	417 watts
Exterior dimensions (including door handle and distance from wall)	w x d x h = 77 x 76 x 193-196 cm
Interior dimensions	w x d x h = 62 x 56 x 140 cm (usable width 2 cm, usable depth 11 cm usable height 13 cm less)
Exterior dimensions with door open at 90°	w x d = 77 x 144 cm
Drawer inner dimensions	w x d x h = 56 x 39 x 10 cm
Max. load drawer	50 kg
Weight	Net weight 124 kg, gross weight 154 kg

Optional equipment

- **Glass door with lock.**
- **LED illumination** mounted at the top.
- **Equipped with castors.**
- **Cooling machine** with cold water connection.
- **Outer housing** in stainless steel 4301, longitudinal brushed.
- **Additional drawer** made of aluminium.
- **Drawer insert** (set) with 4 adjustable length and 25 cross dividers per drawer.
- **Additional length and cross dividers.**
- **Drawer** made of stainless steel instead of aluminium.
- **Shelf** 59.7 x 45 cm on rails or overlays.
- **Baskets** on rails 60 x 45 x 10 cm.
- **Aluminium tray** with rails 60 x 40 x 2,5 cm.
- **Condensate container** can be emptied manually if no condensation is required (e.g., in an operating theatre).
- **GSM-Module** for alarm text message transmission (e.g., to a mobile phone).
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.
 - Mechanical pen-recording thermometer with two waxed paper strips.

Digital temperature display

Antifreeze

Key switch

Minimum/maximum temperature memory

Forced-air cooling

Visual and audible alarm signal, even in the case of power failure

5 drawers

Comfortable access

Automatic fast defrosting

Connection for forwarding alarms and for PC-supported temperature documentation

Low-noise compressor

Condensate evaporation



Large capacity storage

Capacity per drawer app. 45 blood bags, each 500 ml size.



Alarm +2 °C

Reliable antifreeze

against sub-zero temperatures. Cooling machine switches off via electronic board.

BL-720

according to DIN 58371



- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 3 m.
- **Adjustable feet** to compensate for uneven floors.
- **Interior** made from smooth aluminium with colourless protective coating. Gibs (every 15 mm) for flexible interior arrangement.
- **Interior consists** of five drawers of aluminium, height adjustable on telescopic runners with stops. Stacking height: 23cm. Capacity per drawer app. 45 blood bags, each 500 ml size.
- **Extra-thick 70-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Self-closing door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (by default, see illustration), or the left-hand side, can be retrofitted.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.
- **Automatic fast defrosting** thanks to time-limited and temperature-monitored reversal of the refrigerant circuit.
- **Condensate evaporates** in stainless steel heated dish beneath the refrigerator floor.
- **Key switch** protected control panel against tampering. Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using a potential-free contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional KIRSCH-PC-KIT).
- **Antifreeze** against sub-zero temperatures.
- **Ventilation-enforced refrigerating machine**, vibration free, hermetically sealed, energy saving, low-noise, easy to service. Inlet air and exhaust air flow through the ventilation slits at the front.
- **Low-noise compressor** reduces noise by 10 dB to 40 dB (corresponds to noise level I; sound perception: whisper).

Specification

Capacity	700 litres
Temperature setting	+4 °C
Voltage	220 – 240 V, 50/60 Hz
Power consumption	316 watts
Normal consumption	2.8 kWh/24 h
Admissible ambient temperature	from +10 °C to +38 °C
Heat emission (max.)	417 watts
Exterior dimensions (including door handle and distance from wall)	w x d x h = 77 x 98 x 193-196 cm
Interior dimensions	w x d x h = 62 x 77 x 140 cm (usable width 2cm, usable depth 11cm usable height 13 cm less)
Exterior dimensions with door open at 90°	w x d = 77 x 166 cm
Drawer inner dimensions	w x d x h = 56 x 60 x 10 cm
Max. load drawer	50 kg
Weight	Net weight 163 kg, gross weight 198 kg

Optional equipment

- **Glass door with lock.**
- **LED illumination** mounted at the top.
- **Equipped with castors.**
- **Cooling machine** with cold water connection.
- **Outer housing** in stainless steel 4301, longitudinal brushed.
- **Additional drawer** made of aluminium.
- **Drawer insert** (set) with 4 adjustable length and 40 cross dividers per drawer.
- **Additional length and cross dividers.**
- **Drawer** made of stainless steel instead of aluminium.
- **Shelf** 59.7 x 45 cm on rails or overlays.
- **Baskets** on rails 60 x 65 x 10 cm.
- **Aluminium tray** with rails 60 x 65 x 2,5 cm.
- **Condensate container** can be emptied manually if no condensation is required (e.g., in an operating theatre).
- **GSM-Module** for alarm text message transmission (e.g., to a mobile phone).
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.
 - Mechanical pen-recording thermometer with two waxed paper strips.

Digital temperature display

Key switch

Forced-air cooling

3 drawers

Automatic fast
defrosting

Condensate evaporation

Minimum/maximum
temperature memory

Comfortable access

Visual and audible alarm
signal, even in the case
of power failure

Connection for forwarding
alarms and for PC-supported
temperature documentation



Fast defrosting

Fast defrosting reduces defrosting periods with minimal temperature variations.



Controls

Thanks to the re-designed symbols and coloring the operation is more intuitive.

FROSTER-

BL-178 according to DIN 58371



- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 1.8 m.
- **Adjustable feet** to compensate for uneven floors.
- **Interior** made from smooth aluminium with colourless protective coating.
- **Interior consists** of three drawers of aluminium on telescopic runners. Stacking height: 15 cm. Capacity per drawer app. 28 plasma cartons (each 19 x 13 x 2,5 cm), each 400 ml size.
- **Extra-thick 70-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Self-closing door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (by default, see illustration), or the left-hand side, can be retrofitted.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.
- **Automatic fast defrosting** thanks to time-limited and temperature-monitored reversal of the refrigerant circuit.
- **Condensate evaporates** in stainless steel heated dish beneath the refrigerator floor.
- **Key switch** protected control panel against tampering. Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using a potential-free contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional KIRSCH-PC-KIT).
- **Ventilation-enforced refrigerating machine**, vibration free, hermetically sealed, energy saving, low-noise, easy to service. Inlet air and exhaust air flow through the ventilation slits at the front.

Specification

Capacity	170 litres
Temperature setting	-32 °C
Voltage	220 – 240 V, 50 Hz
Power consumption	460 watts
Normal consumption	5.3 kWh/24 h
Admissible ambient temperature	from +10 °C to +32 °C
Heat emission (max.)	603 watts
Exterior dimensions (including door handle and distance from wall)	w x d x h = 70 x 77 x 122 cm
Interior dimensions	w x d x h = 55 x 52 x 60 cm (usable width 3 cm, usable depth 11 cm, usable height 13cm less)
Exterior dimensions with door open at 90°	w x d = 70 x 136 cm
Drawer inner dimensions	w x d x h = 50 x 34 x 10 cm
Max. load drawer	50 kg
Weight	Net weight 104 kg, gross weight 117 kg

Optional equipment

- **LED illumination** mounted at the top.
- **Equipped with castors.**
- **Drawer insert** (set) with 3 adjustable length and 21 cross dividers per drawer.
- **Additional length and cross dividers.**
- **Drawer** made of stainless steel, also possible with cover plate, instead of aluminum.
- **GSM-Module** for alarm text message transmission (e.g., to a mobile phone).
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.
 - Mechanical pen-recording thermometer with two waxed paper strips.

Digital temperature display

Minimum/maximum
temperature memory

Visual and audible alarm
signal, even in the case of
power failure

Key switch

Forced-air cooling

Comfortable access

3 drawers with cover plate

Automatic fast defrosting

Connection for forwarding
alarms and for PC-sup-
ported temperature docu-
mentation

Condensate evaporation



The KIRSCH-PC-KIT

In conjunction with the software KIRSCH DATANET allows a consistently documentation, including real-time monitoring of your refrigerators and freezers from the PC.



Storage temperature -41 °C

The powerful cooling machine keeps the temperature safe at -41 °C.

FROSTER-

BL-180 according to DIN 58375



- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 1.8 m.
- **Adjustable feet** to compensate for uneven floors.
- **Interior made** from smooth aluminium with colourless protective coating.
- **Interior consists** of three drawers of stainless steel with stops, with cover plate on telescopic runners. Capacity per drawer approx. 30 plasma cartons (each 19 x 13 x 2,5 cm), each 400 ml size.
- **Extra-thick 70-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Self-closing door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (by default, see illustration), or the left-hand side, can be retrofitted.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.
- **Automatic fast defrosting** thanks to time-limited and temperature-monitored reversal of the refrigerant circuit.
- **Condensate evaporates** in stainless steel heated dish beneath the refrigerator floor.
- **Key switch protected control panel against tampering.** Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using the potential-free contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional KIRSCH-PC-KIT).
- **Ventilation-enforced refrigerating machine**, vibration free, hermetically sealed, energy saving, low-noise, easy to service. Inlet air and exhaust air flow through the ventilation slits at the front.

Specification

Capacity	170 litres
Temperature setting	-41 °C
Voltage	220 – 240 V, 50 Hz
Power consumption	460 watts
Normal consumption	5.9 kWh/24 h
Admissible ambient temperature	from +10 °C to +32 °C
Heat emission (max.)	500 watts
Exterior dimensions (including door handle and distance from wall)	w x d x h = 70 x 77 x 122 cm
Interior dimensions	w x d x h = 55 x 52 x 60 cm (usable width 3 cm, usable depth 15 cm, usable height 13 cm less)
Exterior dimensions with door open at 90°	w x d = 70 x 136 cm
Drawer inner dimensions	w x d x h = 52 x 32 x 10 cm
Max. load drawer	50 kg
Weight	Net weight 115 kg, gross weight 125 kg

Optional equipment

- **Equipped with castors.**
- **Drawer insert** (set) with 3 adjustable length and 21 cross dividers per drawer.
- **Additional length and cross dividers.**
- **GSM-Module** for alarm text message transmission.
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.



Display at eye-level

The display is positioned at eye-level to make it easier to read and simplify operation.



Comfortable access

Now you no longer have to jerk doors open – all you need is one finger! (For models with aluminium interior containers.)

FROSTER-

BL-330 according to DIN 58375



- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 1.8 m.
- **Adjustable feet** to compensate for uneven floors.
- **Interior** made from smooth aluminium with colourless protective coating. Gibs (every 15 mm) for flexible interior arrangement.
- **Interior consists** of four drawers of aluminium, height adjustable on telescopic runners with stops. Stacking height: 18 cm. Capacity per drawer app. 30 plasma cartons (each 19 x 13 x 2,5 cm), each 400 ml size.
- **Extra-thick 70-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Self-closing door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (by default, see illustration), or the left-hand side, can be retrofitted.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.
- **Automatic fast defrosting** thanks to time-limited and temperature-monitored reversal of the refrigerant circuit.
- **Condensate evaporates** in stainless steel heated dish beneath the refrigerator floor.
- **Key switch protected control panel against tampering.** Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using the potential-free contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional KIRSCH-PC-KIT).
- **Ventilation-enforced refrigerating machine**, vibration free, hermetically sealed, energy saving, low-noise, easy to service. Inlet air and exhaust air flow through the ventilation slits at the front.

Specification

Capacity	300 litres
Temperature setting	-32 °C
Voltage	220 – 240 V, 50 Hz
Power consumption	490 watts
Normal consumption	6.85 kWh/24 h
Admissible ambient temperature	from +10 °C to +32 °C
Heat emission (max.)	653 watts
Exterior dimensions (including door handle and distance from wall)	w x d x h = 74 x 78 x 159 cm
Interior dimensions	w x d x h = 59 x 52 x 95 cm (usable width 2 cm, usable depth 10 cm, usable height 13 cm less)
Exterior dimensions with door open at 90°	w x d = 74 x 142 cm
Drawer inner dimensions	w x d x h = 54 x 37 x 10 cm
Max. load drawer	50 kg
Weight	Net weight 124 kg, gross weight 139 kg

Optional equipment

- **LED illumination** mounted on top.
- **Equipped with castors.**
- **Drawer insert** (set) with 3 adjustable length and 24 cross dividers per drawer.
- **Additional length and cross dividers.**
- **Drawer** made of stainless steel instead of aluminium.
- **Shelf** 57 x 42 cm on rails or overlays.
- **Baskets** 60 x 45 x 10 cm on rails.
- **GSM-Module** for alarm text message transmission.
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.
 - Mechanical pen-recording thermometer with two waxed paper strips.

Digital temperature display

Minimum/maximum
temperature memory

Key switch

Forced-air cooling

Visual and audible alarm
signal, even in the case
of power failure

5 drawers

Comfortable access

Automatic fast defrosting

Connection for
forwarding alarms and
for PC-supported
temperature
documentation

Condensate evaporation

FROSTER-BL-530



Flexible interior design

We deliver our devices in any combination with shelves and / or drawers.



Optimized air guide plate

The optimized air guide plate reduces temperature deviations inside the system to a minimum.

FROSTER-

BL-530/-730 according to DIN 58375



- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 3 m.
- **Adjustable feet** to compensate for uneven floors.
- **Interior** made from smooth aluminium with colourless protective coating. Gibs (every 15 mm) for flexible interior arrangement.
- **Interior consists** of five drawers of aluminium, height adjustable on telescopic runners with stops, stacking height: 23 cm. Capacity per drawer: FROSTER-BL-530 app. 64 plasma cartons, FROSTER-BL-730 app. 96 plasma cartons, each 19 x 13 x 2,5 cm, each 400 ml size.
- **Extra-thick 70-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Self-closing door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (by default, see illustration), or the left-hand side, can be retrofitted.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.
- **Automatic fast defrosting** thanks to time-limited and temperature-monitored reversal of the refrigerant circuit.
- **Condensate evaporates** in stainless steel heated dish beneath the refrigerator floor.
- **Key switch protected control panel against tampering.** Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using the potential-free contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional KIRSCH-PC-KIT).
- **Ventilation-enforced refrigerating machine**, vibration free, hermetically sealed, energy saving, low-noise, easy to service. Inlet air and exhaust air flow through the ventilation slits at the front.

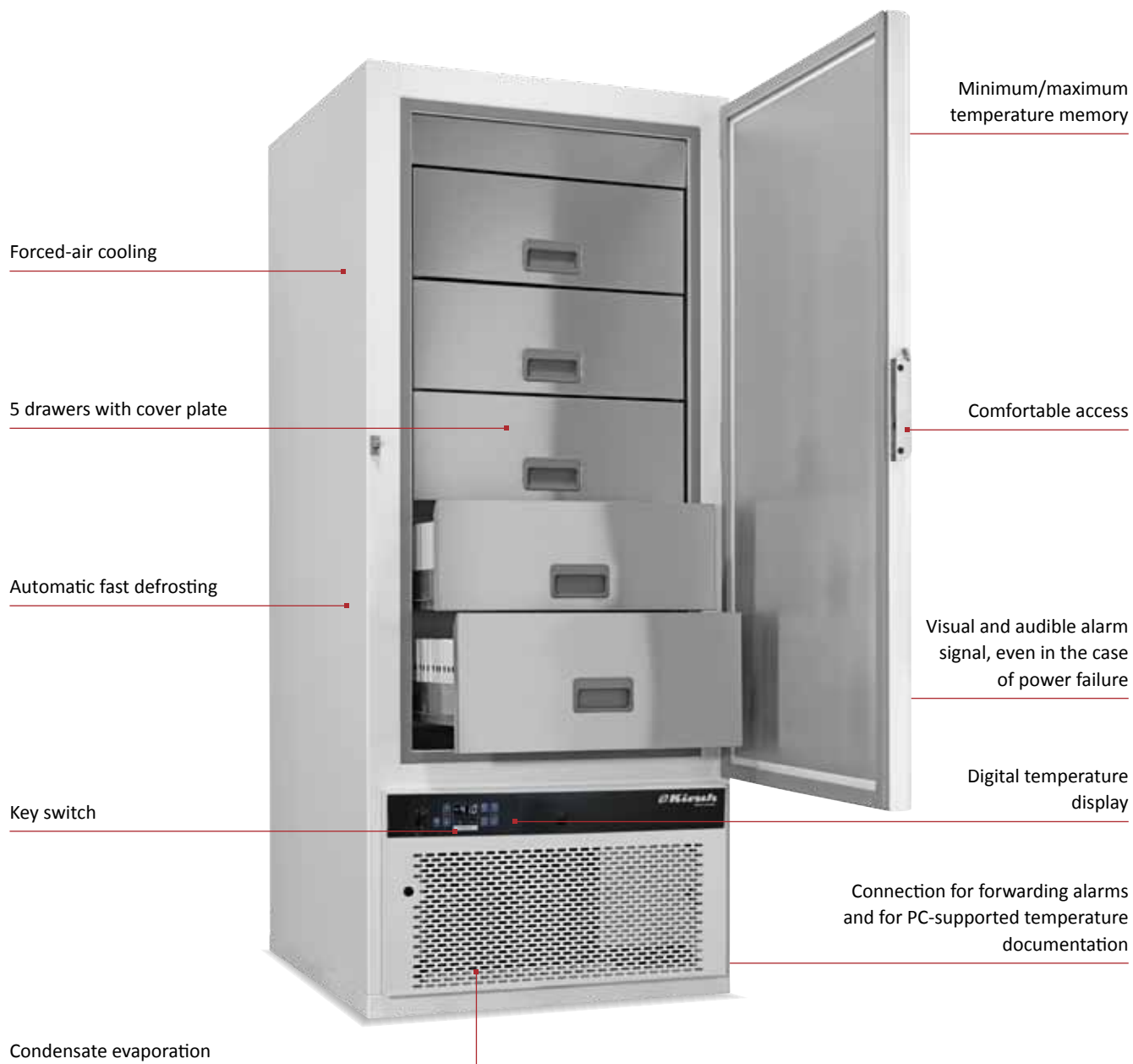
Specification

	FROSTER-BL-530	FROSTER-BL-730
Capacity	500 litres	700 litres
Temperature setting	-32 °C	-32 °C
Voltage	220 – 240 V, 50 Hz	220 – 240 V, 50 Hz
Power consumption	730 Watt	730 Watt
Normal consumption	9,8 kWh/24 h	11,4 kWh/24 h
Admissible ambient temperature	from +10 °C to +32 °C	from +10 °C to +32 °C
Heat emission (max.)	913 Watt	913 Watt
Exterior dimensions (including door handle and distance from wall)	w x d x h = 77 x 76 x 193 - 196 cm	w x d x h = 77 x 98 x 193 - 196 cm
Interior dimensions	w x d x h = 62 x 56 x 140 cm*	w x d x h = 62 x 77 x 140 cm*
Exterior dimensions with door open at 90°	w x d = 77 x 144 cm	w x d = 77 x 166 cm
Drawer inner dimensions	w x d x h = 56 x 39 x 10 cm	w x d x h = 56 x 60 x 10 cm
Max. load drawer	50 kg	50 kg
Weight	Net weight 159 kg, gross weight 189 kg	Net weight 199 kg, gross weight 234 kg

*usable width 2 cm, usable depth 11 cm, usable height 13 cm less

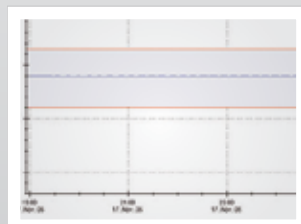
Optional equipment

- **LED illumination** mounted on side wall.
- **Equipped with castors.**
- **Cooling machine** with cold water connection.
- **Outer housing** in stainless steel 4301, longitudinal brushed.
- **Additional drawer** made aluminium.
- **Drawers insert** (set) with 4 adjustable length and 25 (FROSTER-BL-530) or 40 (FROSTER-BL-730) cross dividers per drawer.
- **Additional length and cross dividers.**
- **Drawer** made of stainless steel, also possible with cover plate, black colored, instead of aluminum.
- **Shelf** 59.7 x 45 cm on rails or overlays.
- **Baskets** on rails 60 x 45 x 10 cm.
- **Aluminium** tray with rails 60 x 40 x 2,5 cm.
- **GSM-Module** for alarm text message transmission.
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.
 - Mechanical pen-recording thermometer with two waxed paper strips.



Interior

Interior consists of five stainless steel drawers with cover plates.



Constant temperature

With the high-capacity, two-stage cooling machine the storage temperature is maintained even after frequent door openings. This will protect your stored blood plasma.

FROSTER-

BL-650 according to DIN 58375



- **External housing** made from galvanised sheet steel (rust-proof), with white, anti-scratch powder coating. Length of the plug cable: approx. 2 m.
- **Interior made** from smooth aluminium with colourless protective coating.
- **Interior consists** of five stainless steel drawers with cover plate on fixed mounted, smooth rolling, ball-bearing stainless steel telescopic runners. Stacking height: 21 cm. Capacity of the top drawer app. 96 plasma cartons and of the lower drawer app. 104 plasma cartons (each 19 x 13 x 2,5 cm), each 400 ml size.
- **Extra-thick 100-mm insulation**, made from high-quality, compression-moulded and environmentally friendly material. Energy saving.
- **Door** with easy-to-replace plastic magnetic seal frame, lockable.
- **Door stop** on the right-hand side (see illustration), the left-hand side is not available.
- **Forced-air cooling** with axial blower, switches off automatically when you open the door, ensures a uniform temperature and minimizes temperature deviations.
- **Automatic fast defrosting** thanks to time-limited and temperature-monitored reversal of the refrigerant circuit.
- **Condensate evaporates** in stainless steel heated dish beneath the refrigerator floor.
- **Key switch protected control panel against tampering.** Membrane keyboard with digital temperature display and minimum/maximum temperature memory.
- **Warning functions** with visual and audible alarm signal in the case of power failure and temperature deviations. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power. Door open alarm after 60 seconds.
- **Alarms** can be forwarded using the potential-free contact (e.g., to a mobile phone with optional GSM-Module or to a control centre).
- **RS485 interface** for connecting to PC-supported temperature documentation (using the optional KIRSCH-PC-KIT).
- **Double stage refrigerating machine**, ventilation-enforced, vibration free, hermetically sealed, energy saving, low-noise, easy to service. Inlet air and exhaust air flow through the ventilation slits at the front.

Specification

Capacity	650 litres
Temperature setting	-41 °C
Voltage	220 – 240 V, 50 Hz
Power consumption	960 watts
Normal consumption	11.1 kWh/24 h
Admissible ambient temperature	from +10 °C to +32 °C
Heat emission (max.)	807 watts
Exterior dimensions (including door handle and distance from wall)	w x d x h = 83 x 102 x 197 cm
Interior dimensions	w x d x h = 62 x 76 x 131 cm (usable width 3 cm, usable depth 11 cm, usable height 14 cm less)
Exterior dimensions with door open at 90°	w x d = 86 x 177 cm
Drawer inner dimensions	w x d x h = 59 x 56 x 22 cm (top drawer), w x d x h = 59 x 62 x 22 cm (lower drawers)
Max. load drawer	50 kg
Weight	Net weight 220 kg, gross weight 260 kg

Optional equipment

- **Additional length and cross dividers.**
- **GSM-Module** for alarm text message transmission.
- **Temperature documentation:**
 - PC-KIT-NET, PC-KIT-USB-MONITORING or PC-KIT-STICK including software for temperature documentation.
 - 4-pin PT 100 or PT 1000 temperature sensor, class 1/3 B, including built-in reference body.
 - Disc-type pen recording thermometer, with 7-day measuring cycle, incorporated, with 100 recording discs and 5 felt tip pens.

Accessories for expanding the functionality of your refrigerators and freezers.

Use our practical accessories to expand the feature set of your refrigerator or freezer. Whether it is the KIRSCH-PC-KIT for temperature documentation, or the GSM-Module for forwarding alarms to your mobile phone, or other structural options – we have what you need.



Complete temperature documentation

Manual on-site data capture is time consuming and often imprecise. Use our solutions to deal with these tasks simply and quickly – whether with the KIRSCH-PC-KIT or our more traditional mechanical thermometers.

The KIRSCH-PC-KIT in conjunction with the software KIRSCH-DATANET (scope of delivery) enables:

- Complete documentation at minimal costs using a commercially available PC.
- Real-time system monitoring*.
- Using a PC for configuring the refrigerator/freezer*.

The KIRSCH-PC-KIT is available in 3 versions, each with a specific data transfer option.

KIRSCH PC-KIT

KIRSCH-DATALOG

On older KIRSCH models **without RS485 interface** or to integrate third-party products, you can retrofit the temperature documentation using KIRSCH-DATALOG. With min/max temperature memory and warning functions.

Thermometer

If you prefer the mechanical temperature capture method instead of the PC-supported one, you can use our disc-type thermometer or the pen-recording thermometer.

„[...] Blood products must be stored in applicable cooling devices or storage rooms which are suitable for this purpose [...], and they must feature appropriate measuring, registration and alarm systems for temperature and function monitoring [...]. All storage temperatures have to be documented [...].“

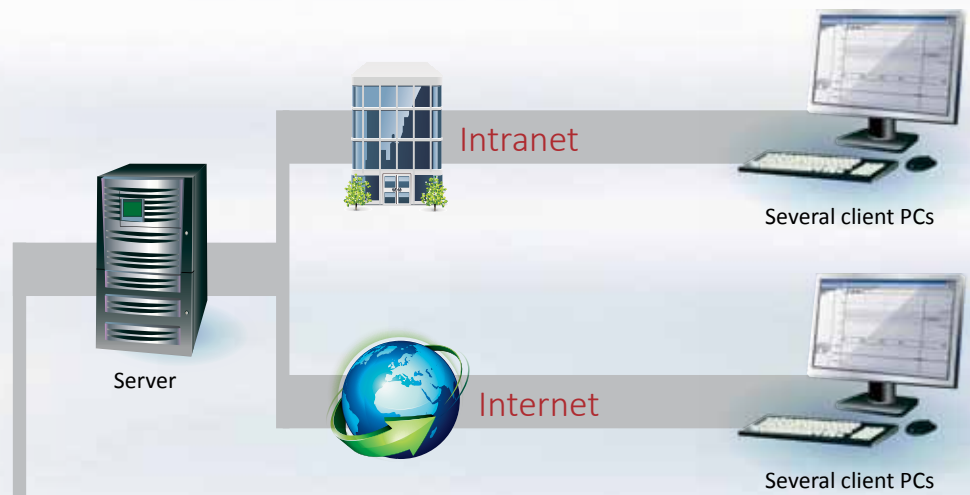
Excerpt from the „Guidelines on the Production of Blood and Blood Fractions and on the Use of Blood Products (Haemotherapy)“, as drawn up by the Federal Association of Practising Physicians, 2005.



External temperature recording

Temperature sensor that can be retrofitted for external connection to PC-supported temperature evaluation devices (e.g., KIRSCH-DATALOG).





PC-KIT-NET

Automatic temperature documentation and monitoring using LAN or Wi-Fi**. Connect as many machines as desired. Up to 3 users can access the data simultaneously. Server-ready.



Several client PCs



See www.kirsch-medical.com for more information on **temperature documentation** in our separate information package.



PC-KIT-STICK

The easiest method for electronic temperature documentation using a USB stick. Permanent documentation, even while data is being read.



PC



PC-KIT-USB-MONITORING

Automatic temperature documentation and monitoring using a USB cable for up to 32 machines. Single workstation version.



Single workstation PC



Disc-type thermometer

Depending on the model, this is either installed into the machine room screen of the refrigerator or freezer or integrated into an additional housing add-on.



Pen-recording thermometer

The easiest method to retrofit temperature documentation.



* excluding PC-KIT-STICK

** with commercially available Wi-Fi adapter



Leaving with a secure feeling – Text message alarm forwarding

The GSM module is used to forward alarm text messages to a mobile or landline phone network. This requires an activated SIM card and sufficient reception at the installation location.

Connect the GSM-Module using the potential-free contact. Reaching the alarm limits triggers a visual and audible signal at the GSM-Module and the sending of an alarm text message.



Technical options

KIRSCH refrigerators and freezers provide numerous interior design options that can be retrofitted even when the machine has already been installed.



Glass door

Avoid opening the door unnecessarily to inspect the contents. Can be locked.



Side wall/ ceiling interior lighting

Optional, optimal and energy-efficient lighting for the interior using an LED light strip



Water-cooled refrigerating machine

For special cases, refrigerating machines with heat exchangers for cold-water connection are available for some models.



Transportable design

Equipped with steering and fixed castors.



Condensation containers

Transparent, for manual emptying.



Stainless steel shelves and wire shelves

Stainless steel shelves – guaranteed rust-free, and wire shelves, PE coated, robust with load capacity of up to 40 kg.



Drawers/ Length and cross dividers

Optimized per model, some are height adjustable. The length and cross dividers are adjustable in a variety of manners.



Combination of refrigerator and freezer

Through a connector refrigerators and freezers can be placed one above the other and combined.

Our service – your benefit

- Short response time
- Competent assistance
- Specialised, continuously trained expert staff

Philipp Kirsch GmbH



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Monday - Thursday: 8.00h - 12.15h and 13.15h - 16.30h
Friday: 8.00h - 12.00h and 13.00h - 16.00h

Some examples:



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We have taken the greatest care to describe our systems to our customers as clearly as possible in this catalogue. Nevertheless further questions may arise in everyday use, in particular when dealing with high-quality technical products. In such an instance, please do not hesitate to call us; we will be happy to assist you. We are also constantly working on evolving all product types and models. Therefore, we kindly ask for your understanding that shape, design and technology of our systems are subject to change.



**Photograph this QR code
and get to know our entire
product range.**