Blood Bank Refrigerators according to DIN 58371
Blood Plasma Freezers according to DIN 58375
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.”
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 fulfil 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

1967
KIRSCHE 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
KIRSCHE is the leading quality manufacturer of refrigerators and freezers for the laboratory and health sector
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.

Easy-to-maintain interior container
Manufactured from smooth aluminium with protective coating or from impact-resistant plastic with moulded-in shelves.

Flexible handling of 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.
Precise controls
To accurately maintain the temperature that is required by the standard for blood storage.

Forced-air cooling
All our models are equipped with forced-air cooling. This reduces the physically induced temperate drop and enables an almost constant temperature to be maintained.

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

Self-closing doors
Doors left open accidentally are a thing of the past (except BL 100 and Froster BL-650.)

Custom door stop
The door stop 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.

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Company certified by TÜV SÜD Management Service GmbH according to ISO 9001:2008
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.

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.

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

Temperature documentation
The RS 485 interface together with the optional 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.

*when used together with the optional GSM module.
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 100 kg/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 then -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 optimised for each system and consists of a co-ordinated combination of blower and air baffle.
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.

Temperature measurement with log file enables you to prove that our products fulfil the requirements in real-life applications (validation, such as IQ, OQ, PQ, etc.)

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 fulfil the requirements in real-life applications (validation, such as IQ, OQ, PQ, etc.)

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

<table>
<thead>
<tr>
<th>Interior Description</th>
<th>Refrigerators according to DIN 58371</th>
<th>Freezers according to DIN 58375</th>
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<tbody>
<tr>
<td></td>
<td><strong>BL-100</strong></td>
<td><strong>BL-176</strong></td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
<td>95 l</td>
<td>170 l</td>
</tr>
<tr>
<td><strong>Temperature setting</strong></td>
<td>+4 °C</td>
<td>+4 °C</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>38 °C</td>
<td>38 °C</td>
</tr>
<tr>
<td><strong>Forced-air cooling</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>RS 485 interface</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Potential-free contact for forwarding alarms</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Automatic defrosting and condensate evaporation</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Number of drawers</strong></td>
<td>2 x 5</td>
<td>2 x 5</td>
</tr>
<tr>
<td><strong>Gibs</strong></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Undercounter installation</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Comfortable access</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Self-closing door</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Notes:**
- ● = Yes, ○ = No
- Temperature is set according to the current DIN standard.
- Ambient temperature is the maximum temperature at the refrigerator’s or freezer’s place of installation. Correct operation is possible up to this temperature.
- Integrated forced-air cooling reduces temperature reductions caused by the law of physics and ensures a uniform temperature in the entire interior.
- For digital temperature documentation. When used together with the optional PC-KIT, the refrigerator can be connected to a PC or network using this interface.
- The potential-free contact allows you to forward alarms as text messages to your mobile phone. You can also connect the system to the control centre.
- Time and temperature are monitored. Manual defrosting is no longer required. Condensate evaporates automatically.
- Standard number of integrated aluminium, stainless steel or plastic drawers with stops.
- For interior containers made from aluminium, gibs allow a particularly varied use of the interior. Drawers can be positioned as desired every 15 mm.
- 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.
- Now you no longer have to jerk doors open—all you need is one finger!
Our product innovations

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 new product design and further innovations.

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.

Ventilation grid
The wide ventilation openings provide easy cleaning and improve the flow of air in the refrigerating machine room.

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.

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.
Antifreeze
Connection for forwarding alarms and for PC-supported temperature documentation
Minimum/maximum temperature memory

Forced-air cooling
Connection for forwarding alarms and for PC-supported temperature documentation

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

Standalone or undercounter installation
The standard ventilation grid allows easy installation in functional furniture.

Easy-to-clean ventilation slits
Large, smooth lamellas for easy cleaning of the ventilation slits.

Standalone or undercounter installation
The standard ventilation grid allows easy installation in functional furniture.

2 drawers

Minimum/maximum temperature memory

Digital temperature display

Standalone or undercounter installation

Key switch

Forced-air cooling

Automatic defrosting

Condensate evaporation

See www.kirsch-medical.com for the installation drawing.
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 app. 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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.
- **Alarms** can be forwarded using the floating contact (e.g., to a mobile phone with optional GSM module or to a control centre).
- **RS 485 interface** for connecting to PC-supported temperature documentation (using the optional 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.

**Specification**

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

**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.
Blood Bank Refrigerator BL-176

- Digital temperature display
- Key switch
- Forced-air cooling
- 2 drawers
- Automatic defrosting
- Condensate evaporation

- Antifreeze
- Minimum/maximum temperature memory
- Visual and audible alarm signal, even in the case of power failure
- Comfortable access
- Connection for forwarding alarms and for PC-supported temperature documentation

- 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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.
- **Alarms** can be forwarded using the floating contact (e.g., to a mobile phone with optional GSM module or to a control centre).
- **RS 485 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.

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### Specification

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

### 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.
**Storage Overview**

of your blood bags in aluminium 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, four are height adjustable on telescopic runners with stops. Stacking height: 22cm. Capacity per drawer app. 26 blood bags, each 500 ml size.
- **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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.
- **Alarms** can be forwarded using a potential-free contact (e.g., to a mobile phone with optional GSM module or to a control centre).
- **RS 485 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.

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**Specification**

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

---

**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.
**Blood Bank Refrigerator BL-520**

**Clean**
Control screen made of plastic with smooth surface for promoting hygiene.

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

- **Digital temperature display**
- **Key switch**
- **Forced-air cooling**
- **5 drawers**
- **Automatic fast defrosting**
- **Condensate evaporation**
- **Antifreeze**
- **Minimum/maximum temperature memory**
- **Visual and audible alarm signal, even in the case of power failure**
- **Comfortable access**
- **Connection for forwarding alarms and for PC-supported temperature documentation**

**NEW**
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: 23cm. 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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.
- Alarms can be forwarded using a potential-free contact (e.g., to a mobile phone with optional GSM module or to a control centre).
- RS 485 interface for connecting to PC-supported temperature documentation (using the optional PC-KIT).
- Antifreeze against sub-zero temperatures.
- Ventilation-enhanced 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

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>500 litres</td>
</tr>
<tr>
<td>Temperature setting</td>
<td>+4 °C</td>
</tr>
<tr>
<td>Voltage</td>
<td>220 – 240 V, 50/60 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>316 watts</td>
</tr>
<tr>
<td>Normal consumption</td>
<td>2.5 kWh/24 h</td>
</tr>
<tr>
<td>Admissible ambient temperature</td>
<td>from +10 °C to +38 °C</td>
</tr>
<tr>
<td>Heat emission (max.)</td>
<td>417 watts</td>
</tr>
<tr>
<td>Exterior dimensions</td>
<td>w x d x h = 77 x 76 x 193-196 cm</td>
</tr>
<tr>
<td>Interior dimensions</td>
<td>w x d x h = 62 x 56 x 140 cm (usable width 2 cm, usable depth 11 cm usable height 13 cm less)</td>
</tr>
<tr>
<td>Exterior dimensions</td>
<td>w x d = 77 x 144 cm</td>
</tr>
<tr>
<td>Drawer dimensions</td>
<td>w x d x h = 56 x 39 x 10 cm</td>
</tr>
<tr>
<td>Max. load drawer</td>
<td>50 kg</td>
</tr>
<tr>
<td>Weight</td>
<td>Net weight 124 kg, gross weight 154 kg</td>
</tr>
</tbody>
</table>

### 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.
**Blood Bank Refrigerator BL-720**

**Large capacity storage**
Capacity per drawer app. 45 blood bags, each 500 ml size.

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

- Digital temperature display
- Key switch
- Forc-air cooling
- 5 drawers
- Automatic fast defrosting
- Condensate evaporation
- Antifreeze
- Minimum/maximum temperature memory
- Visual and audible alarm signal, even in the case of power failure
- Comfortable access
- Connection for forwarding alarms and for PC-supported temperature documentation
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: 23 cm. 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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.
- **Alarms** can be forwarded using a potential-free contact (e.g., to a mobile phone with optional GSM module or to a control centre).
- **RS 485 interface** for connecting to PC-supported temperature documentation (using the optional 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.

### Specification

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

### 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.
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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.

**Alarms** can be forwarded using a potential-free contact (e.g., to a mobile phone with optional GSM module or to a control centre).

**RS 485 interface** for connecting to PC-supported temperature documentation (using the optional PC-KIT).

**Ventilation-enforced refrigerating machine**, vibration free, hermetically sealed, energy saving, low noise, easy to service. Inlet and exhaust air flow through the ventilation slits at the front.

### Specification

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

### 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.
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 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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.
- **Alarms** can be forwarded using the potential-free contact (e.g., to a mobile phone with optional GSM module or to a control centre).
- **RS 485 interface** for connecting to PC-supported temperature documentation (using the optional 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

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

### 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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.
- **Alarms** can be forwarded using the potential-free contact (e.g., to a mobile phone with optional GSM module or to a control centre).
- **RS 485 interface** for connecting to PC-supported temperature documentation (using the optional 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

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

### 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.
Blood Plasma Freezer FROSTER-BL-530/-730

- **Digital temperature display**
- **Key switch**
- **Forced-air cooling**
- **5 drawers**
- **Automatic fast defrosting**
- **Condensate evaporation**
- **Minimum/maximum temperature memory**
- **Visual and audible alarm signal, even in the case of power failure**
- **Comfortable access**
- **Connection for forwarding alarms and for PC-supported temperature documentation**

**Flexible interior design**
We deliver our devices in any combination with shelves and/or drawers.

**Optimized air guide plate**
The optimised 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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.

**Alarms** can be forwarded using the potential-free contact (e.g., to a mobile phone with optional GSM module or to a control centre).

**RS 485 interface** for connecting to PC-supported temperature documentation (using the optional 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**

<table>
<thead>
<tr>
<th></th>
<th>FROSTER-BL-530</th>
<th>FROSTER-BL-730</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>500 litres</td>
<td>700 litres</td>
</tr>
<tr>
<td>Temperature setting</td>
<td>-32 °C</td>
<td>-32 °C</td>
</tr>
<tr>
<td>Voltage</td>
<td>220 – 240 V,</td>
<td>220 – 240 V,</td>
</tr>
<tr>
<td></td>
<td>50 Hz</td>
<td>50 Hz</td>
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<tr>
<td>Power consumption</td>
<td>730 watts</td>
<td>730 watts</td>
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<tr>
<td>Normal consumption</td>
<td>9.8 kWh/24 h</td>
<td>11.4 kWh/24 h</td>
</tr>
<tr>
<td>Admissible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ambient temperature</td>
<td>from +10 °C to</td>
<td>from +10 °C to</td>
</tr>
<tr>
<td></td>
<td>+32 °C</td>
<td>+32 °C</td>
</tr>
<tr>
<td>Heat emission (max.)</td>
<td>913 watts</td>
<td>913 watts</td>
</tr>
<tr>
<td>Exterior dimensions</td>
<td>w x d x h =</td>
<td>w x d x h =</td>
</tr>
<tr>
<td>(including door handle and</td>
<td>77 x 76 x 193 -</td>
<td>77 x 98 x 193 -</td>
</tr>
<tr>
<td>distance from wall)</td>
<td>196 cm</td>
<td>196 cm</td>
</tr>
<tr>
<td>Interior dimensions</td>
<td>w x d x h =</td>
<td>w x d x h =</td>
</tr>
<tr>
<td></td>
<td>62 x 56 x 140 cm*</td>
<td>62 x 77 x 140 cm*</td>
</tr>
<tr>
<td>Exterior dimensions with</td>
<td>w x d =</td>
<td>w x d =</td>
</tr>
<tr>
<td>door open at 90°</td>
<td>77 x 144 cm</td>
<td>77 x 146 cm</td>
</tr>
<tr>
<td>Drawer inner dimensions</td>
<td>w x d x h =</td>
<td>w x d x h =</td>
</tr>
<tr>
<td></td>
<td>56 x 39 x 10 cm</td>
<td>56 x 60 x 10 cm</td>
</tr>
<tr>
<td>Max. load drawer</td>
<td>50 kg</td>
<td>50 kg</td>
</tr>
<tr>
<td>Weight</td>
<td>Net weight 159 kg, gross weight 189 kg</td>
<td>Net weight 199 kg, gross weight 234 kg</td>
</tr>
</tbody>
</table>

*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 aluminium.
- **Shelf** 59.7 x 45 cm on rails or overlays.
- **Baskets** on rails 60 x 40 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 stainless steel drawers with cover plate.

**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 per drawer app. 64 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 minimises 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. In the case of power failure, the monitoring unit remains in operation for approx. 72 hours on battery power.
- **Alarms** can be forwarded using the potential-free contact (e.g., to a mobile phone with optional GSM module or to a control centre).
- **RS 485 interface** for connecting to PC-supported temperature documentation (using the optional 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

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

## 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 KIRSCH refrigerator or freezer. Whether it is the 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.

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

**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.

**KIRSCH PC-KIT**

**KIRSCH-DATALOG**

On older KIRSCH models without RS 485 interface or to integrate third-party products, you can retrofit the temperature documentation using KIRSCH-DATALOG.

**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.

External temperature recording

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

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

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

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

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

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

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.

Optional accessories

Glass door with lock
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
Optimised per model, some are height adjustable.

Length and cross dividers for drawers
Adjustable in a variety of manners.
Our service—your benefit

Competent advice
Do you have any questions about our products? We can offer you professional advice. Because our service is as reliable as our products. We are looking forward to your call!

24/7 customer services
Faults must be rectified as soon as possible. For this reason, we work with BOSCH customer services as our service partner. Professional staff are on hand 24 hours a day, 7 days a week. Furthermore, one of the 600 highly trained technicians will be pleased to solve your problem on site.

An overview of your benefits:
- 24-hour availability, 7 days a week
- Fast response thanks to an extensive service network
- Specialised, continuously trained expert staff
- Certified according to DIN ISO 9001.

Germany: BOSCH customer services
01801 223355*
01801 225307
*0.039 euro/minute from the German landline network; mobile network charges may vary. Order placement: 24 hours a day, 7 days a week.

Austria: BOSCH customer services
0810 240-260*
01 60575-51212
*Regional call rates apply. Order placement: Monday—Thursday 8:00 am—5:00 pm, Friday 8:00 am—1:00 pm.
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.