Laboratory Refrigerators and Freezers

- with explosion-proof interior
- without explosion-proof interior

Your partner for medical and health-service refrigeration
Established in 1865, the Philipp Kirsch company started out as a coppersmith’s workshop. This craft business mainly produced distilling apparatus used for the production of alcohol. At the turn of the century the company began to make the first cooling systems for natural ice.

In the mid-1920s, the craft trade business, which had grown larger in the course of the years, embarked on the production of other refrigerating products as well and became a genuine industrial manufacturing plant.

Since the production of our first electric compressor-cooled refrigerator in the year 1956, the product range has been regularly extended and its technical development linked closely to state-of-the-art technologies.

The certificates prove: Kirsch Refrigerators and Freezers are top-quality products that are manufactured in series using cutting-edge equipment - used all over the world by laboratories, hospitals, blood banks, pharmaceutical chemists and institutes.

Philipp Kirsch, certified to ISO 9001:2000, guarantees consistently high quality and functional safety through its quality management system.

Since more than 140 years.
From the coppersmith’s workshop to an industrial firm.
Laboratory Refrigerators and Freezers
Quality and function of our items.

**TEMPERATURE**
For storage purposes there is a large temperature range available between +0° C to +20° C and / or -5° C to -30° C.

**INSULATING**
The housing is insulated with particularly good, environmentally-compatible pressure foam material to guarantee low energy consumption levels. The outside housing comprises galvanised sheet steel with a white powder coating. Large units have adjustable feet.

**CONTAINER**
The interior container is made of smooth aluminium with a transparent protective coating or of impact-resistant plastic with moulded supports.

**INTERIOR EQUIPMENT**
The drawers / shelves are adjustable within a 15mm raster for refrigerators and freezers with the interior of smooth aluminium sheet. The longitudinal and cross dividers within the drawers are individually adjustable.

**DOOR**
The lockable door has a plastic magnetic sealing frame that is easy to replace. There is no overhang when the door is open. Door hinged on the right as standard, however this can be changed to the left at later date.
General equipment features.
User guidance and tried-and-tested features.

**MEMORY**
The min./max. memory starts when the normal temperature is reached for the first time. It stores the highest and lowest temperature values since either the initial start or the last reset.

**DEFROSTING**
Automatic defrosting with a time and temperature monitoring function. Refrigerators with an explosion-proof interior are fitted with a drip tray for manual disposal of defrost water. All other appliances feature automatic defrost water evaporation.

**SECURITY FIXTURE**
The warning system on the refrigerators prevents the temperature from dropping below the lower set temperature limit which is fixed ex works.

**CONTACT**
In the case of refrigerators and freezers with warning systems, the voltage-free contact allows the alarm to be switched to a variety of communication or monitoring systems (e.g., remote warning systems, central process control systems, telephone self-dialling devices, GSM-Module). These units can be connected to a computer system via the RS 485 interface.

**CONTROLLER**
The temperature is kept constant automatically by means of an electronic, microprocessor controlled temperature control unit, even when there are fluctuations in the ambient temperature. To protect against unauthorised access, the electronic temperature monitoring unit is secured with a key switch. Units with alarm systems will provide warnings in case of unacceptable temperature deviations, when the door is open for too long, or when a processor or temperature sensor is defective.

**SHELVES/DRAWERS**
The sturdy PE-coated wire shelves have a load-bearing capacity of approx. 40 kg. The height of some of the model-specific optimized drawers can be adjusted, and they have adjustable depth and width separators. Thus ensuring tidy, clearly arranged storage.

**COOLING**
Recirculating air-cooling reduced the physically induced temperature drop and enables an almost constant temperature to be maintained.
Temperature measurement with record. Validation with qualification documents.

The temperature curves depicted show the very constant temperature progression. The values are measured using PT-sensors in the air (without defrosting). The combination of recirculating air-cooling and electronic, micro-processor controlled temperature regulator ensures an almost constant temperature of the cooled articles even under changing environmental conditions.

The type of recirculating air cooling used (air baffle, recirculating fan etc.) is specially matched to the respective refrigerator or freezer model.

Measurements and examination during production guarantee optimum adjustment of the temperature-control sensors.

The calibration devices used in our manufacturing processes are monitored regularly, and we only use top-quality products in this very sensitive field.

The refrigerators and freezers are checked under changing environmental conditions in the cold chamber.

Kirsch Refrigerators and Freezers are also used in demanding storage areas (pharmaceutical research, production, medical, biotechnology etc.). For this reason, the cooling appliances undergo multiple qualification or validation through users or specially nominated companies. We will be happy to support you with the validation or qualification of our products. We can also give you details of partner companies that can carry out validation for you and issue the qualification documents (IQ, OQ etc.).
Laboratory Refrigerators and Freezers

Capacity
Kirsch Laboratory Refrigerators and Freezers are available with different capacities and in numerous versions. The range comprises a wide assortment of models, from small to large-volume versions: Laboratory refrigerators with 80 to 700 litres, laboratory freezers with 70 to 700 litres capacity.

Temperature setting
There are large temperature ranges available for storing goods: Kirsch Laboratory Refrigerators from 0 to +20 °C, Laboratory Freezers (FROSTERS) from -5 to -30 °C. The temperature set is maintained automatically – even under changing environmental conditions – by a thermostat or an electronic, micro-processor controlled temperature regulator.

Recirculating air-cooling
Recirculating air-cooling reduced the physically induced temperature drop and enables an almost constant temperature to be maintained.

Automatic defrosting
With Kirsch Laboratory Refrigerators and Freezers with an automatic defrosting feature – which is carried out monitoring of time and temperature – manual defrosting is no longer required. Laboratory refrigerators and freezers with explosion-proof interiors have an integrated melt water dish which has to be emptied manually. In all other laboratory refrigerators and freezers from Kirsch, melt water evaporates automatically.

Support rails
Used with interior containers made of smooth aluminium with a transparent protective coating, support rails guarantee particularly versatile use of the interior. The sturdy, PE-coated shelves and drawers can be inserted according to individual requirements at intervals of only 15mm.

Explosion-proof interior
Kirsch Laboratory Refrigerators and Freezers are available with or without explosion-proof interior, depending on the version. The versions with explosion-proof interior (LABEX models) meet the safety requirements for zone 2 potentially explosive areas and guarantee there is no source of ignition on the interior.

RS 485 Interface
The RS 485 interface allows the cooling appliances to be connected to IT systems, which in turn allows the data output to be digitally processed. A PC-Kit with temperature documentation software is available as an option and is used to record temperature data using a Windows-compatible PC.

Moulded support brackets
Interior containers made of impact-proof plastic moulded support brackets guarantee particularly high stability. The shelves and drawers can easily be inserted at the prescribed heights.

Potential-free contact for alarm relaying
Kirsch Laboratory Refrigerators and Freezers with potential-free contact allow alarms to be relayed to different communication or monitoring systems such as remote warning systems, for example, self-dial telephones or central control technology. The potential-free contact triggers during mains power failure or alarm states, such as impermissible temperature deviations.

Suitable for integration
Models that can be integrated in existing cupboards and are thus extremely space-saving. During installation, care must be taken that the cooling machine is sufficiently ventilated. The respective installation sketches are available as a PDF file for downloading from www.kirsch-offenburg.de
## Summary

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<thead>
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<th>Model</th>
<th>Equipment</th>
<th>Page</th>
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</thead>
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<tr>
<td>LABO-85</td>
<td>80 l +2 to +12 °C</td>
<td>8</td>
</tr>
<tr>
<td>LABO-100</td>
<td>95 l +2 to +20 °C</td>
<td>9</td>
</tr>
<tr>
<td>LABO-125</td>
<td>120 l +2 to +20 °C</td>
<td>10</td>
</tr>
<tr>
<td>SPEZIAL-282</td>
<td>280 l 0 to +10 °C</td>
<td>11</td>
</tr>
<tr>
<td>SPEZIAL-432</td>
<td>430 l 0 to +10 °C</td>
<td>11</td>
</tr>
<tr>
<td>SPEZIAL-340</td>
<td>330 l +2 to +20 °C</td>
<td>12/13</td>
</tr>
<tr>
<td>SPEZIAL-468</td>
<td>460 l +2 to +20 °C</td>
<td>12/13</td>
</tr>
<tr>
<td>SUPER-520</td>
<td>500 l 0 to +20 °C</td>
<td>14/15</td>
</tr>
<tr>
<td>SUPER-720</td>
<td>700 l 0 to +20 °C</td>
<td>14/15</td>
</tr>
<tr>
<td>FROSTER-320</td>
<td>300 l -5 to -30 °C</td>
<td>16/17</td>
</tr>
<tr>
<td>FROSTER-520</td>
<td>500 l -5 to -30 °C</td>
<td>16/17</td>
</tr>
<tr>
<td>FROSTER-720</td>
<td>700 l -5 to -30 °C</td>
<td>16/17</td>
</tr>
<tr>
<td>SUPER-720-CHROMAT</td>
<td>700 l +4 to +20 °C</td>
<td>18</td>
</tr>
</tbody>
</table>

### ATEX/TÜV-Certificate

<table>
<thead>
<tr>
<th>Model</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>LABEX-105</td>
<td>95 l +2 to +20 °C</td>
</tr>
<tr>
<td>LABEX-125</td>
<td>120 l +2 to +12 °C</td>
</tr>
<tr>
<td>LABEX-285</td>
<td>280 l +2 to +20 °C</td>
</tr>
<tr>
<td>LABEX-335</td>
<td>330 l +2 to +20 °C</td>
</tr>
<tr>
<td>LABEX-465</td>
<td>460 l +2 to +20 °C</td>
</tr>
<tr>
<td>LABEX-288</td>
<td>280 l +2 to +20 °C</td>
</tr>
<tr>
<td>LABEX-340</td>
<td>330 l +2 to +20 °C</td>
</tr>
<tr>
<td>LABEX-468</td>
<td>460 l +2 to +20 °C</td>
</tr>
<tr>
<td>FROSTER-LABEX-70</td>
<td>70 l -15 to -22 °C</td>
</tr>
<tr>
<td>FROSTER-LABEX-96</td>
<td>95 l -5 to -25 °C</td>
</tr>
<tr>
<td>FROSTER-LABEX-320</td>
<td>300 l -5 to -30 °C</td>
</tr>
<tr>
<td>FROSTER-LABEX-520</td>
<td>500 l -5 to -30 °C</td>
</tr>
<tr>
<td>FROSTER-LABEX-720</td>
<td>700 l -5 to -30 °C</td>
</tr>
</tbody>
</table>

### Accessories

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LABO-85

- 1 Drawer - 2 Shelves
- Suitable for integration into built-in units or fitting beneath a worktop
- Automatic defrosting
- Melt water evaporation
- Stepless temperative selection

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.

Interior of impact-resistant white plastic with moulded in shelf guides.

Insulating, 42 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.

Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

Defrosting automatically with thermal and time limit functions.

Melt water evaporation in the compressor area.

Temperature gear by room thermostat. The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.

Compressor, static ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50 Hz mains. Length of mains cable approx. 1,8 m.

Equipment features at extra charge:
- Cooling machine ventilator for operation at 60 Hz or when the static ventilation is not sufficient where appliances are integrated in cupboards
- Top drawer, lockable
- Water tray for manual emptying
- Optical and acoustic warning system incl. power failure alarm and interface RS 485

Appliances for temperature documentation:
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system

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| LABO-85 | 
| --- | --- | 
| Capacity | 80 litres | 
| Temperature setting | app. +2 °C to +12 °C | 
| Drawer/shelves | 1/2 | 
| Voltage | 220 – 240 V, 50 Hz | 
| Power draft | 100 Watts | 
| Average consumption | 0,6 kWh/24 h | 
| Overall dimensions (incl. distance from wall) | w x d x h = 47 x 51 x 74 cm | 
| Interior dimensions | w x d x h = 38 x 41 x 63 cm (usable depth above 5 cm, below 15 cm less) | 
| Overall dim. with door open at 90° | w x d = 47 x 96 cm | 
| Shelf dimensions | 23 x 37,8 cm resp. 34 x 37,8 cm | 
| Drawer inner dimensions | w x d x h = 32 x 30 x 5 cm | 
| Max. load per drawer/shelf | 9,5 kg/25 kg | 
| Weight | net 31 kg, gross 37 kg |
LABO-100

- 2 Shelves
- Suitable for integration into built-in units or fitting beneath a worktop
- Recirculating air-cooling
- Automatic defrosting
- Melt water evaporation
- Digital temperature display

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.

Interior of impact-resistant white plastic with moulded in shelf guides.

Insulating, 50 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.

Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

Recirculating air-cooling by means of a cross flow blower which keeps the temperature constant and reduces the natural temperature stratification. The cross flow blower cuts out automatically when the door is opened, for a minimum loss of cold air.

Defrosting automatically with thermal and time limit functions.

Melt water evaporation in the compressor area.

Key switch protected control panel with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation with potential free contact for remote monitoring. Defrost control light and red warning light. Standard equipped with interface RS 485.

Temperature gear by electronic thermostat. The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.

Safety control device prevents from freezing.

Compressor, dynamic ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50/60 Hz mains. Length of mains cable approx. 1.8 m.

Equipment features at extra charge:
- Power failure alarm (optical and acoustic up to 72 hours)
- Work surface
- Additional shelves or drawers
- Lockable glass door
- Water tray for manual emptying
- GSM-Module
- Castors

Appliances for temperature documentation:
- PC-Kit (USB-Version)
- PC-Kit-Net (Network capable version) incl. documentation software
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system

<table>
<thead>
<tr>
<th>LABO-100</th>
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</thead>
<tbody>
<tr>
<td>Capacity</td>
</tr>
<tr>
<td>Temperature setting</td>
</tr>
<tr>
<td>Shelves</td>
</tr>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>Power draft</td>
</tr>
<tr>
<td>Average consumption</td>
</tr>
<tr>
<td>Overall dimensions (incl. distance from wall) w x d x h = 54 x 53,5 x 82 cm</td>
</tr>
<tr>
<td>Interior dimensions w x d x h = 44 x 43 x 47 cm (usable depth 5 cm, width 2 cm less)</td>
</tr>
<tr>
<td>Overall dim. with door open at 90° w x d = 54 x 105,5 cm</td>
</tr>
<tr>
<td>Shelf dimensions</td>
</tr>
<tr>
<td>Max. load per drawer/shelf</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>
LABO-125

- 2 Shelves
- Suitable for integration into built-in units or fitting beneath a worktop
- Automatic defrosting
- Melt water evaporation
- Interior digital temperature display
- Acoustic warning in case of temperature deviation

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.

Interior of impact-resistant white plastic with moulded in shelf guides.

Insulating, 50 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.

Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

Defrosting automatically with thermal and time limit functions.

Melt water evaporation in the compressor area.

Temperature gear by electronic thermostat. The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.

Compressor, static ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50 Hz mains. Other voltages on request. Length of mains cable approx. 1.8 m.

Equipment features at extra charge:
- Additional shelves (43.8 x 33 cm) or drawers
- Water tray for manual emptying
- Work surface
- Digital temperature display prepared for external installation
- Connecting terminal for remote alarm (potential free contact)
- GSM-Module
- Glass door
- Castors

Appliances for temperature documentation:
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system

<table>
<thead>
<tr>
<th>LABO-125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
</tr>
<tr>
<td>Temperature setting</td>
</tr>
<tr>
<td>Shelves</td>
</tr>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>Power draft</td>
</tr>
<tr>
<td>Average consumption</td>
</tr>
<tr>
<td>Overall dimensions without work surface (incl. distance from wall)</td>
</tr>
<tr>
<td>Interior dimensions</td>
</tr>
<tr>
<td>Overall dim. with door open at 90°</td>
</tr>
<tr>
<td>Shelf dimensions</td>
</tr>
<tr>
<td>Max. load per drawer/shelf</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>

Option:
Digital temperature display prepared for external installation
SPEZIAL-282/-432

- 3 Shelves (SPEZIAL-282)
- 4 Shelves (SPEZIAL-432)
- Recirculating air-cooling
- Automatic defrosting
- Melt water evaporation
- Stepless temperature selection

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.

Adjustable feet in front in case of uneven floor.

Interior of impact-resistant white plastic with moulded in shelf guides.

Insulating, 50 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.

Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

Recirculating air-cooling by means of a cross flow blower which keeps the temperature constant an reduces the natural temperature stratification. The cross flow blower cuts out automatically when the door is opened, for a minimum loss of cold air.

Defrosting automatically with thermal and time limit functions.

Melt water evaporation in the compressor area.

Temperature gear by interior thermostat. The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.

Compressor, static ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50 Hz mains, model SPEZIAL-282 50/60 Hz mains. Other voltages on request. Length of mains cable approx. 1,8 m.

Equipment features at extra charge:
- Additional shelves
- Additional drawers (only for SPEZIAL-282)
- Glass door
- Lock for glass door
- Optical and acoustic warning system incl. power failure alarm and interface RS 485
- GSM-Module
- Castors

Appliances for temperature documentation:
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system

<table>
<thead>
<tr>
<th>Feature</th>
<th>SPEZIAL-282</th>
<th>SPEZIAL-432</th>
</tr>
</thead>
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<tr>
<td>Capacity</td>
<td>280 liters</td>
<td>430 litres</td>
</tr>
<tr>
<td>Temperature setting</td>
<td>app. 0 °C to +10 °C</td>
<td>app. 0 °C to +10 °C</td>
</tr>
<tr>
<td>Shelves</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Voltage</td>
<td>220 – 240 V, 50/60 Hz</td>
<td>220 – 240 V, 50 Hz</td>
</tr>
<tr>
<td>Power draft</td>
<td>150 Watts</td>
<td>135 Watts</td>
</tr>
<tr>
<td>Average consumption</td>
<td>1,0 kWh/24 h</td>
<td>0,9 kWh/24 h</td>
</tr>
<tr>
<td>Overall dimensions (incl. distance from wall and door handle)</td>
<td>w x d x h = 67 x 70 x 115 cm</td>
<td>w x d x h = 74 x 70 x 144 cm</td>
</tr>
<tr>
<td>Interior dimensions</td>
<td>w x d x h = 53 x 50 x 100 cm (usable depth above 5 cm, below less 14 cm)</td>
<td>w x d x h = 60 x 50 x 130 cm (usable depth above 5 cm, below less 14 cm)</td>
</tr>
<tr>
<td>Overall dim. with door open at 90°</td>
<td>w x d = 67 x 130 cm</td>
<td>w x d = 74 x 137 cm</td>
</tr>
<tr>
<td>Shelf dimensions</td>
<td>55,3 cm x 45 cm</td>
<td>62,3 cm x 45 cm</td>
</tr>
<tr>
<td>Max. load for drawer/shelf</td>
<td>16 kg/40 kg</td>
<td>~40 kg</td>
</tr>
<tr>
<td>Weight</td>
<td>net 59 kg, gross 70 kg</td>
<td>net 73 kg, gross 85 kg</td>
</tr>
</tbody>
</table>

Pictured is Model Spezial-282
SPEZIAL-340/-468

- 1 Drawer and 3 Shelves (SPEZIAL-340)
- 4 Shelves (SPEZIAL-468)
- Recirculating air-cooling
- Automatic defrosting
- Melt water evaporation
- Digital temperature display

Equipment features at extra charge:
- Power failure alarm (optical and acoustic up to 72 hours)
- Glass door
- Lock for glass door
- Additional drawers or shelves
- Additional length and cross dividers
- Aluminium trays with support rails
  60 x 40 x 2.5 cm (SPEZIAL-468)
- Baskets with rails
  60 x 45 x 10 cm (SPEZIAL-468)
- Water tray for manual emptying
- GSM-Module
- Castors

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.

Adjustable feet in front in case of uneven floor.

Interior of smooth aluminium sheet with colourless protective coating. Light metal strip with 15 mm raster. 1 drawer on pull out rails with stop, vertical adjustment in 15 mm steps. 2 adjustable length dividers and 9 adjustable cross dividers per drawer. Storage capacity per drawer = 0.16 m³. Loading capacity per drawer = max. 16 kg, per shelf = max 40 kg.

Insulating, 55 mm thick, of high grade pressure foamed and pro-environmental material. Extra thick for energy saving effect.

Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

Recirculating air-cooling by means of a cross flow blower which keeps the temperature constant and reduces the natural temperature stratification. The cross flow blower cuts out automatically when the door is opened, for a minimum loss of cold air.

Defrosting automatically with thermal and time limit functions.

Melt water evaporation in the compressor area.

Safety control device prevents freezing.

Key switch protected control panel with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation with potential free contact for remote monitoring. Defrost control light and red warning light. Standard equipped with interface RS 485.

Temperature gear by electronic thermostat. The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.

Compressor, static ventilated, model SPEZIAL-468 dynamic ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50 Hz mains, model SPEZIAL-468 50/60 Hz mains. Other voltages on request. Length of mains cable approx. 1.8 m.

Appliances for temperature documentation:
- PC-Kit (USB-Version)
- PC-Kit-Net (Network capable version)
  incl. documentation software
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system

The longitudinal and cross dividers within the drawers are individually adjustable.

The distance between drawers/shelves is adjustable within a 15 mm raster.
<table>
<thead>
<tr>
<th></th>
<th>SPEZIAL-340</th>
<th>SPEZIAL-468</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>330 litres</td>
<td>460 litres</td>
</tr>
<tr>
<td>Temperature setting</td>
<td>app. +2 °C to +20 °C</td>
<td>app. +2 °C to +20 °C</td>
</tr>
<tr>
<td>Drawers/shelves</td>
<td>1/3</td>
<td>1/4</td>
</tr>
<tr>
<td>Voltage</td>
<td>220 – 240 V, 50 Hz</td>
<td>220 – 240 V, 50/60 Hz</td>
</tr>
<tr>
<td>Power draft</td>
<td>150 Watts</td>
<td>180 Watts</td>
</tr>
<tr>
<td>Average consumption</td>
<td>1,2 kWh/24 h</td>
<td>1,4 kWh/24 h</td>
</tr>
<tr>
<td>Overall dimensions</td>
<td>w x d x h = 67 x 45 x 171,5 cm</td>
<td>w x d x h = 74 x 45 x 171,5 cm</td>
</tr>
<tr>
<td>Interior dimensions</td>
<td>w x d x h = 60 x 32 x 5,6 cm</td>
<td>w x d x h = 74 x 52 cm</td>
</tr>
<tr>
<td>Overall dim. with door</td>
<td>w x d = 67 x 74 x 122 cm</td>
<td>w x d = 74 x 142 cm</td>
</tr>
<tr>
<td>Max. load per drawer/shelf</td>
<td>16 kg/40 kg</td>
<td>24 kg/40 kg</td>
</tr>
<tr>
<td>Weight</td>
<td>net 90 kg, gross 97 kg</td>
<td>net 98 kg, gross 100 kg</td>
</tr>
</tbody>
</table>
SUPER-520/-720

- 5 Shelves
- Recirculating air-cooling
- Automatic defrosting
- Melt water evaporation
- Digital temperature display
- Minimum/Maximum temperature memory

- Potential free contact
- Interface RS 485
- Safety control device prevents freezing
- Optical and acoustic warning in case of temperature deviation and door alarm

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.

Adjustable feet in front in case of uneven floor.

Interior of smooth aluminium sheet with colourless protective coating. Light metal strip with 15 mm raster.

Insulating, 70 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.

Self-closing lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

Recirculating air-cooling by means of a cross flow blower which keeps the temperature constant an reduces the natural temperature stratification. The cross flow blower cuts out automatically when the door is opened, for a minimum loss of cold air.

Rapid defrosting by time limited, automatic reverse of the refrigerant circuit.

Melt water evaporation in heated tray made of stainless steel.

Key switch protected control panel with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation with potential free contact for remote monitoring. Switch for air-humidity selection, defrost control light and red warning light. Standard equipped with interface RS 485.

Safety control device prevents freezing.

Temperature gear by electronic thermostat. The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.

Compressor, dynamic ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50/60 Hz mains. Other voltages on request. Length of mains cable approx. 3 m.

Equipment features at extra charge:
- Power failure alarm (optical and acoustic up to 72 hours)
- Additional shelves with brackets or rails
- Baskets with rails
  - 60 x 45 x 10 cm (SUPER-520), 60 x 65 x 10 cm (SUPER-720)
- Aluminium trays with rails
  - 60 x 40 x 2.5 cm (SUPER-520), 60 x 65 x 2.5 cm (SUPER-720)
- Drawers with pull-out rails
  - 57.4 x 40 x 5.6 cm (SUPER-520)
- Water tray for manual emptying
- GSM-Module
- Castors
- Cooling machine with natural refrigerant
- Outer panels in stainless steel 4301
- Glass door with lock

Appliances for temp. documentation:
- PC-Kit (USB-Version)
- PC-Kit-Net (Network capable version) incl. documentation software
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- Disc-type pen-recording thermometer with 7-day measuring cycle on top, with 100 recording discs and 5 felt tip pens.
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system

The picture shows model SUPER-V-520 with interior light and glass door. Disc-type pen-recording thermometer at extra charge.
<table>
<thead>
<tr>
<th></th>
<th>SUPER-520</th>
<th>SUPER-720</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td>500 litres</td>
<td>700 litres</td>
</tr>
<tr>
<td><strong>Temperature setting</strong></td>
<td>app. 0 °C to +20 °C</td>
<td>app. 0 °C to +20 °C</td>
</tr>
<tr>
<td><strong>Shelves</strong></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>220 – 240 V, 50/60 Hz</td>
<td>220 – 240 V, 50/60 Hz</td>
</tr>
<tr>
<td><strong>Power draft</strong></td>
<td>370 Watts</td>
<td>370 Watts</td>
</tr>
<tr>
<td><strong>Average consumption</strong></td>
<td>2,9 kWh/24 h</td>
<td>3,0 kWh/24 h</td>
</tr>
<tr>
<td><strong>Overall dimensions (incl. door handle)</strong></td>
<td>w x d x h = 77 x 76 x 193 - 196 cm</td>
<td>w x d x h = 77 x 97 x 193 - 196 cm</td>
</tr>
<tr>
<td><strong>Interior dimensions</strong></td>
<td>w x d x h = 60 x 57 x 140 cm (usable depth 12 cm less)</td>
<td>w x d x h = 60 x 78 x 140 cm (usable depth 13 cm less)</td>
</tr>
<tr>
<td><strong>Overall dim. with door open at 90°</strong></td>
<td>w x d = 77 x 144 cm</td>
<td>w x d = 77 x 165 cm</td>
</tr>
<tr>
<td><strong>Shelf dimensions</strong></td>
<td>59,7 cm x 45 cm</td>
<td>59,7 cm x 65 cm</td>
</tr>
<tr>
<td><strong>Max. load per drawer/shelf</strong></td>
<td>24 kg/40 kg</td>
<td>24 kg/40 kg</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>net 120 kg, gross 150 kg</td>
<td>net 145 kg, gross 180 kg</td>
</tr>
</tbody>
</table>
4 Shelves (FROSTER-320)
5 Shelves (FROSTER-520/-720)
Recirculating air-cooling
Automatic rapid defrosting
Rapid freezing cycle
Digital temperature display

Outer panels of galvanised sheet steel (protection against sub surface rusting), while powder coated.
Adjustable feet in front in case of uneven floor.
Interior of smooth aluminium sheet with clear protective coating. Light metal strip with 15 mm raster.
Insulating, 70 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.
Self-closing lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.
Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.
Recirculating air-cooling by means of a cross flow blower which keeps the temperature constant an reduces the natural temperature stratification. The cross flow blower cuts out automatically when the door is opened, for a minimum loss of cold air.
Rapid defrosting by automatic reverse of the refrigerant circuit with thermal control and time function. During defrosting period the necessary low temperature is kept.
Melt water evaporation in headed tray made of stainless steel.
Key switch protected control panel with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation and door ajar alarm with potential free contact for remote monitoring. Switch for air-humidity selection, defrost control light and red warning light. Standard equipped with interface RS 485.
Temperature gear by electronic thermostat. The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.
Compressor, dynamic ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50 Hz mains. Other voltages on request. Length of mains cable approx. 1.8 m (FROSTER-320), approx. 3 m (FROSTER-520/-720).

Equipment features at extra charge:
- Power failure alarm (optical and acoustic up to 72 hours)
- Additional shelves or baskets
- Drawers with pull out rails
- Aluminium trays with rails
- Basket on rails
- GSM-Module
- Castors
- Outer panels in stainless steel 4301, (FROSTER-520/-720)
- Cooling machine water-cooled (Froster-520/-720)

Appliances for temperature documentation:
- PC-Kit (USB-Version)
- PC-Kit-Net (Network capable version) incl. documentation software
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- Disc-type pen recording thermometer with 7-day measuring cycle on top, with 100 recording discs and 5 felt tip pens.
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system
<table>
<thead>
<tr>
<th></th>
<th>FROSTER-320</th>
<th>FROSTER-520</th>
<th>FROSTER-720</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>300 litres</td>
<td>500 litres</td>
<td>700 litres</td>
</tr>
<tr>
<td>Temperature</td>
<td>app. -5 °C to -30 °C</td>
<td>app. -5 °C to -30 °C</td>
<td>app. -5 °C to -30 °C</td>
</tr>
<tr>
<td>Shelves</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Voltage</td>
<td>220 – 240 V, 50 Hz</td>
<td>220 – 240 V, 50 Hz</td>
<td>220 – 240 V, 50 Hz</td>
</tr>
<tr>
<td>Power draft</td>
<td>540 Watts</td>
<td>640 Watts</td>
<td>640 Watts</td>
</tr>
<tr>
<td>Average</td>
<td>4.58 kWh/24 h</td>
<td>7.6 kWh/24 h</td>
<td>8.7 kWh/24 h</td>
</tr>
<tr>
<td>Overall dim. (incl. door handle)</td>
<td>w x d x h = 74 x 77 x 149 cm</td>
<td>w x d x h = 77 x 76 x 193 – 196 cm</td>
<td>w x d x h = 77 x 97 x 193 – 196 cm</td>
</tr>
<tr>
<td>Interior dim.</td>
<td>w x d x h = 59,5 x 53 x 95 cm (usable depth 12 cm less)</td>
<td>w x d x h = 60 x 57 x 140 cm (usable depth 12 cm less)</td>
<td>w x d x h = 60 x 78 x 140 cm (usable depth 13 cm less)</td>
</tr>
<tr>
<td>Overall dim.</td>
<td>w x d = 74 x 141 cm</td>
<td>w x d = 77 x 144 cm</td>
<td>w x d = 77 x 165 cm</td>
</tr>
<tr>
<td>Shelf dimensions</td>
<td>57 x 42 cm</td>
<td>59,7 x 45 cm</td>
<td>59,7 x 65 cm</td>
</tr>
<tr>
<td>Max. load per</td>
<td>–/40 kg</td>
<td>24 kg/40 kg</td>
<td>–/40 kg</td>
</tr>
<tr>
<td>Weight net</td>
<td>120 kg, gross 135 kg</td>
<td>net 140 kg, gross 170 kg</td>
<td>net 165 kg, gross 200 kg</td>
</tr>
</tbody>
</table>
5 Shelves
- Recirculating air-cooling
- Glass door
- Interior light
- Built-in 3-way-socket
- Access port for cables and probes Ø app. 7 cm

Equipment features at extra charge:
- Power failure alarm (optical and acoustic up to 72 hours)
- Additional shelves with brackets on rails
- Baskets with rails
- 60 x 65 x 10 cm
- Aluminium trays with rails
- 60 x 65 x 2.5 cm
- Water tray for manual emptying
- GSM-Module
- Castors
- Cooling machine water-cooled
- Cooling machine with natural refrigerant

Appliances for temperature documentation:
- PC-Kit (USB-Version)
- PC-Kit-Net (Network capable version) incl. documentation software
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- Disc-type pen recording thermometer with 7-day measuring cycle on top, with 100 recording discs and 5 felt tip pens.
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.

Adjustable feet in front in case of uneven floor.

Interior of smooth aluminium sheet with clear protective coating. Light metal strip with 15 mm raster.

Insulating, 70 mm thick, of highgrade pressure foamed and pro environmental material. Extra thick for energy saving effect.

Self-closing lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

Recirculating air-cooling by means of a cross flow blower which keeps the temperature constant and reduces the natural temperature stratification. The cross flow blower cuts out automatically when the door is opened, for a minimum loss of cold air.

Interior light vertical, illuminating complete interior, with door contact switch and switch for permanent lighting.

Rapid defrosting by time limited, automatic reverse of the refrigerant circuit.

Melt water evaporation in headed tray made of stainless steel.

Key switch protected control panel with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation and door ajar alarm with potential free contact for remote monitoring. Switch for air-humidity selection, defrost control light and red warning light. Standard equipped with interface RS 485.

Safety control device prevents freezing.

Temperature gear by electronic thermostat. The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.

Compressor, static ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50/60 Hz mains. Other voltages on request. Length of mains cable approx. 3 m.

Super-720-Chromat

Capacity 700 litres
Temperature setting app. +2 °C to +20 °C
Shelves 5
Voltage 220 – 240 V, 50/60 Hz
Power draft 390 Watts
Average consumption 3,5 kWh/24 h
Overall dimensions (incl. door handle) w x d x h = 77 x 97 x 193 - 196 cm
Interior dimensions w x d x h = 60 x 78 x 140 cm (usable depth 10 cm less)
Overall dim. with door open at 90° w x d = 77 x 165 cm
Shelf dimensions 59,7 cm x 65 cm
Max. load per shelf 40 kg
Weight net 165 kg, gross 200 kg
Kirsch Refrigerators and Freezers with explosion-proof interior are TÜV-tested to the safety requirements of the directive 94/9/EC (ATEX 95) EN 1127-1:1997 and BGR 120, section 3.8, as well as to the EC Low Voltage Directive 2006/95/EC and for electromagnetic compatibility (EMC) 2004/108/EC.

The refrigerators and freezers on pages 20, 21, 26 and 27 bear the mark \( \text{Ex} \) \( \text{II 3 G T6} \).

The refrigerators and freezers on pages 22, 23, 24, 25, 28 and 29 have increased safety levels, are intrinsically safe on the interior according to APEX 95, and bear the mark \( \text{Ex} \) \( \text{II 3 G Ex cic IIB T6} \).

Special features of the refrigerators or freezers according to directive 94/9/EG (ATEX 95):
- Analysis of ignition hazard according to EN 1127-1:1997, carried out by TÜV SÜD Product Service GmbH
- Design safety has been tested by TÜV SÜD Product Service GmbH for all non-electrical parts. (depending on model)
- Intrinsic safety tested by TÜV SÜD Product Service GmbH for all electrical components on the interior (depending on model)
- Energy restriction of the power circuits on the cooled interior:
  - Temperature sensor protected by safety barrier
  - Recirculating blower protected by an energy-restricting safety power pack
  - The door frame heating of the freezers meets requirements of temperature class T6.
- Ground protection for the complete interior (potential equality)
- Cooled interior is not opened to the outside (manual removal of melt water)
- Vacuum compensation of the cooled interior of freezers with recirculating air-cooling through controlled ventilation valve.
- Conductive material combinations on the inside are non-combustible
- Examination of the interiors to ensure they are free of ignition sources according to directive 94/9/EG (ATEX 95) by TÜV SÜD Product Service GmbH with certificate
- Guaranteed set-up according to design specification
- Production facilities are inspected by an independent accredited company

Explanations of the marking according to directive 94/9/EG (ATEX 95)

The marking according to guideline 94/9/EG is built up as follows:

- Special mark for protection against explosions
- Device group (here: II = devices not intended for mining)
- Category (here: 3 = devices guarantee a normal degree of safety)
- Type of potentially explosive atmosphere (here: G = potentially explosive gas, vapour, fog, air mixtures)
- Design safety in accordance with EN 13463-5
- Intrinsic safety in accordance with EN 60099-11
- Explosion group (classification of vapours and gases)
- Temperature class (here: T6 = maximum surface temperature +85 °C)

The temperature and defrosting sensors of the models with electronic control are specially protected by safety barriers.

The laboratory refrigerator models LABEX-288, LABEX-340 and LABEX-468 are equipped with recirculating cooling, which reduces the drop in temperature caused by physical reasons and ensures an almost homogenous temperature. The axial blower used for recirculating cooling is specially fuse-protected through a mains adapter.

The laboratory freezer models FROSTER-LABEX-320, FROSTER-LABEX-520 and FROSTER-LABEX-720 are equipped with recirculating cooling and automatic rapid defrosting. The electronic temperature sensors and axial fan for recirculating cooling are protected by separate fuses. Thanks to hot-gas defrosting with reversal refrigerant circuit, defrosting is fast and efficient.
LABEX-105

1 Drawer and 2 Shelves
Suitable for integration into built-in units or fitting beneath a worktop
Automatic defrosting
Digital temperature display
Minimum/Maximum temperature memory

Potential free contact
Interface RS 485
Safety control device prevents freezing
Optical and acoustic warning in case of temperature deviation and door open alarm
The interior with marking: Ex II 3 G T6

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.
Interior of impact-resistant white plastic with moulded in shelf guides.
Insulating, 50 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.
Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.
Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.
Defrosting automatically with thermal control and time limit function.
Melt water tray for manual emptying.
Key switch protected control panel with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation and door ajar alarm with potential free contact for remote monitoring. Switch for air-humidity selection, defrost control light and red warning light. Standard equipped with interface RS 485.
Safety control device prevents freezing.
Temperature gear by electronic thermostat (sensor protected by safety barrier). The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.
Compressor, dynamic ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50/60 Hz mains. Other voltages on request. Length of mains cable approx. 1,8 m.

Equipment features at extra charge:
- Power failure alarm (optical and acoustic up to 72 hours)
- Glass door with lock
- Work surface
- Additional shelves or drawers
- GSM-Module
- Castors

Appliances for temperature documentation:
- PC-Kit-Net (network capable version), incl. documenta-
tion software or PC-Kit with data logger, RS 485 / USB-gateway (converter) 10m. Data cable and tempera-
ture documentation software (CD-ROM, windows compatible).
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor (incl. safety barriers) for temperature recording and monitoring via EDP system

<table>
<thead>
<tr>
<th>LABEX-105</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
</tr>
<tr>
<td>Temperature setting</td>
</tr>
<tr>
<td>Drawers/shelves</td>
</tr>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>Power draft</td>
</tr>
<tr>
<td>Average consumption</td>
</tr>
<tr>
<td>Overall dimensions (incl. distance from wall)</td>
</tr>
<tr>
<td>Interior dimensions</td>
</tr>
<tr>
<td>Overall dim. with door open at 90°</td>
</tr>
<tr>
<td>Shelf dimensions</td>
</tr>
<tr>
<td>Drawer inner dimensions</td>
</tr>
<tr>
<td>Max. load per drawer/shelf</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>
LABEX-125

- 1 Drawer and 2 Shelves
- Suitable for integration into built-in units or fitting beneath a worktop
- Stepless temperature selection
- The interior with marking: \( \text{Ex I 3 G T6} \)

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.

Interior of impact-resistant white plastic with moulded in shelf guides.

Insulating, 50 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.

Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

Defrosting manually.

Melt water tray for manual emptying.

Temperature gear by room thermostat. The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.

Safety control device prevents freezing.

Compressor, static ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50 Hz mains. Other voltages on request. Length of mains cable approx. 1.8 m.

Equipment features at extra charge:
- Work surface
- Additional shelves (43.8 x 33 cm) or drawers
- Additional length or cross dividers
- Glass door
- Castors

Appliances for temperature documentation:
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor (incl. safety barriers) for temperature recording and monitoring via EDP system

The longitudinal and cross dividers within the drawers are individually adjustable.

### Technical Specifications

<table>
<thead>
<tr>
<th>LABEX-125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
</tr>
<tr>
<td>Temperature setting</td>
</tr>
<tr>
<td>Drawers/shelves</td>
</tr>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>Power draft</td>
</tr>
<tr>
<td>Average consumption</td>
</tr>
<tr>
<td>Overall dimensions (incl. distance from wall)</td>
</tr>
<tr>
<td>Interior dimensions</td>
</tr>
<tr>
<td>Overall dim. with door open at 90°</td>
</tr>
<tr>
<td>Shelf dimensions</td>
</tr>
<tr>
<td>Drawer inner dimensions</td>
</tr>
<tr>
<td>Max. load per drawer/shelf</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>
LABEX-285/-335/-465

- 1 Drawer und 3 Shelves (LABEX-285)
- 2 Drawers und 4 Shelves (LABEX-335)
- 6 Shelves (LABEX-465)
- Automatic defrosting
- Digital temperature display
- Minimum/Maximum temperature memory
- Potential free contact
- Interface RS 485
- Safety control prevents freezing
- Optical and acoustic warning in case of temperature deviation and door open alarm
- The interior with marking: Ex II 3 G Ex c IIC T6

Outer panels of galvanised sheet steel (protection against sub surface rusting), while powder coated.
Adjustable feet in front in case of uneven floor.
Interior of smooth aluminium sheet with clear protective coating. Light metal strip with 15 mm raster.
Insulating, 55 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.
Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.
Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.
Defrosting automatically with thermal control and time limit function.
Melt water tray for manual emptying.
Key switch protected control panel with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation and door ajar alarm with potential free contact for remote monitoring. Switch for air-humidity selection, defrost control light and red warning light. Standard equipped with interface RS 485.
Safety control device prevents freezing.
Temperature gear by electronic thermostat (sensor protected by safety barrier). The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.
Compressor, static ventilated, model LABEX-465 dynamic ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50/60 Hz mains, model LABEX-335 50 Hz only. Other voltages on request. Length of mains cable approx. 1,8 m.

Equipment features at extra charge:
- Power failure alarm (optical and acoustic up to 72 hours)
- Glass door with lock
- Additional shelves or drawers
- Additional length or cross dividers
- Aluminium trays with rails 60 x 40 x 2,5 cm (LABEX-465)
- GSM-Module
- Castors

Appliances for temperature documentation:
- PC-Kit (USB-Version)
- PC-Kit-Net (Network capable version) incl. documentation software
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system
<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity (litres)</th>
<th>Temperature Setting</th>
<th>Drawers/Shelves</th>
<th>Voltage</th>
<th>Power Draft</th>
<th>Average Consumption</th>
<th>Overall Dimensions (incl. distance from wall and door handle)</th>
<th>Interior Dimensions (usable depth above 9 cm, below 14 cm less)</th>
<th>Shelf Dimensions</th>
<th>Max. Load per Drawer/Shelf</th>
<th>Weight Net</th>
<th>Gross Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>LABEX-285</td>
<td>280 litres</td>
<td>+2 °C to +20 °C</td>
<td>1/3</td>
<td>220 – 240 V, 50/60 Hz</td>
<td>0.6 kWh/24 h</td>
<td>120 Watts</td>
<td>0.6 kWh/24 h</td>
<td>67 x 70 x 124 cm</td>
<td>53 x 50 x 100 cm (usable depth above 9 cm, below 14 cm less)</td>
<td>52.7 x 39 cm</td>
<td>16 kg/40 kg</td>
<td>68 kg</td>
</tr>
<tr>
<td>LABEX-335</td>
<td>330 litres</td>
<td>+2 °C to +20 °C</td>
<td>2/4</td>
<td>220 – 240 V, 50 Hz</td>
<td>0.9 kWh/24 h</td>
<td>120 Watts</td>
<td>0.9 kWh/24 h</td>
<td>67 x 64 x 171.5 cm</td>
<td>53 x 45 x 128 cm (usable depth 6 cm less)</td>
<td>52.7 x 39 cm</td>
<td>16 kg/40 kg</td>
<td>76 kg</td>
</tr>
<tr>
<td>LABEX-465</td>
<td>460 litres</td>
<td>+2 °C to +20 °C</td>
<td>-/6</td>
<td>220 – 240 V, 50/60 Hz</td>
<td>1.0 kWh/24 h</td>
<td>160 Watts</td>
<td>1.0 kWh/24 h</td>
<td>74 x 74 x 171.5 cm</td>
<td>59.4 x 57 x 132 cm (usable depth 6 cm less)</td>
<td>74 x 142 cm</td>
<td>24 kg/40 kg</td>
<td>92 kg</td>
</tr>
</tbody>
</table>
PRODUCT FEATURES:

- **1 Drawer und 3 Shelves (LABEX-288)**
- **2 Drawers und 4 Shelves (LABEX-340)**
- **6 Shelves (LABEX-468)**
- **Recirculating air-cooling (protected via mains supply unit)**
- **Automatic defrosting**
- **Digital temperature display**
- **Minimum/Maximum temperature memory**

**Equipment features at extra charge:**

- **Power failure alarm (optical and acoustic up to 72 hours)**
- **Glass door with lock**
- **Additional shelves or drawers**
- **Aluminium trays with rails**
- **60 x 40 x 2,5 cm (LABEX-468)**
- **GSM-Module**
- **Castors**

**Appliances for temperature documentation:**

- **PC-Kit (USB-Version)**
- **PC-Kit-Net (Network capable version)**
- **incl. documentation software**
- **Pen-recording thermometer for placing loosely inside appliance with waxed paper strips**
- **PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system**

**Outer panels** of galvanised sheet steel (protection against sub surface rusting), while powder coated.

**Adjustable feet** in case of uneven floor (LABEX-288 only in front).

**Interior** of smooth aluminium sheet with clear protective coating. Light metal strip with 15 mm raster.

**Insulating**, 55 mm thick, of high grade pressure foamed and pro-environmental material. Extra thick for energy saving effect.

**Lockable door** with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

**Door hinge** changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

**Defrosting** automatically with thermal control and time limit function (defrost sensor protected by safety barrier).

**Melt water tray** for manual emptying.

**Recirculating air-cooling** by means of a axial blower which keeps the temperature constant and reduces the natural temperature stratification. The axial blower cuts out automatically when the door is opened, for a minimum loss of cold air.

**Key switch protected control panel** with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation and door ajar alarm with potential free contact for remote monitoring. Switch for air-humidity selection, defrost control light and red warning light. Standard equipped with interface RS 485.

**Safety control device** prevents freezing.

**Temperature gear** by electronic thermostat (sensor protected by safety barrier). The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.

**Compressor**, static ventilated, model LABEX-468 dynamic ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50/60 Hz mains, model LABEX-340 50 Hz only. Other voltages on request. Length of mains cable approx. 1,8 m.
<table>
<thead>
<tr>
<th>LABEX-288</th>
<th>LABEX-340</th>
<th>LABEX-468</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>280 litres</td>
<td>330 litres</td>
</tr>
<tr>
<td>Temperature setting</td>
<td>+2 °C to +20 °C</td>
<td>+2 °C to +20 °C</td>
</tr>
<tr>
<td>Drawers/shelves</td>
<td>1/3</td>
<td>2/4</td>
</tr>
<tr>
<td>Voltage</td>
<td>220 – 240 V, 50/60 Hz</td>
<td>220 – 240 V, 50 Hz</td>
</tr>
<tr>
<td>Power draft</td>
<td>140 Watts</td>
<td>130 Watts</td>
</tr>
<tr>
<td>Average consumption</td>
<td>0,9 kWh/24 h</td>
<td>1,0 kWh/24 h</td>
</tr>
<tr>
<td>Overall dimensions</td>
<td>67 x 70 x 124 cm</td>
<td>67 x 64 x 171,5 cm</td>
</tr>
<tr>
<td>Interior dimensions</td>
<td>53 x 50 x 100 cm</td>
<td>52,7 x 39 cm</td>
</tr>
<tr>
<td>Shelf dimensions</td>
<td>52,7 x 39 cm</td>
<td>52,7 x 39 cm</td>
</tr>
<tr>
<td>Drawer inner</td>
<td>50,4 x 32 x 5,6 cm</td>
<td>50,4 x 32 x 5,6 cm</td>
</tr>
<tr>
<td>Max. load per</td>
<td>16 kg/40 kg</td>
<td>16 kg/40 kg</td>
</tr>
<tr>
<td>Weight net</td>
<td>72 kg, gross 85 kg</td>
<td>89 kg, gross 96 kg</td>
</tr>
</tbody>
</table>
1 Drawer und 3 Shelves
- Suitable for integration into built-in units or fitting beneath a worktop
- Stepless temperature selection
- Actual value thermometer
- The interior with marking: Ex II 3 G T6

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.
Interior of impact-resistant white plastic with moulded in shelf guides.
Insulating, 55 mm thick, of high-grade pressure foamed and pro-environmental material. Extra thick for energy saving effect.
Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.
Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.
Defrosting manual.
Melt water tray for manual emptying.
Temperature gear by interior thermostat. The temperature is kept automatically, independent of changes in ambient temperature.
Compressor, static ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50/60 Hz mains. Other voltages on request. Length of mains cable approx. 1.8 m.

Equipment features at extra charge:
- Cooling machine ventilator when the static ventilation is not sufficient where appliances are integrated in cupboards
- Optical and acoustic warning system incl. power failure alarm and interface RS 485

Appliances for temperature documentation:
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system

<table>
<thead>
<tr>
<th>FROSTER-LABEX-70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
</tr>
<tr>
<td>Temperature setting</td>
</tr>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>Power draft</td>
</tr>
<tr>
<td>Average consumption</td>
</tr>
<tr>
<td>Overall dimensions (incl. distance from wall)</td>
</tr>
<tr>
<td>Interior dimensions</td>
</tr>
<tr>
<td>Overall dim. with door open at 90°</td>
</tr>
<tr>
<td>Shelf dimensions</td>
</tr>
<tr>
<td>Drawer inner dimensions</td>
</tr>
<tr>
<td>Max. load per drawer/shelf</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>
FROSTER-LABEX-96

- 2 Shelves
- Suitable for integration into built-in units or fitting beneath a worktop
- Rapid freezing cycle
- Digital temperature display

- Minimum/Maximum temperature memory
- Potential free contact
- Interface RS 485
- Optical and acoustic warning in case of temperature deviation
- The interior with marking: Ex II 3 G T6

Outer panels of galvanised sheet steel (protection against sub surface rusting), white powder coated.

Interior of impact-resistant white plastic with moulded in shelf guides.

Insulating, 50 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.

Lockable door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.

Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.

Defrosting manual.

Melt water tray for manual emptying.

Key switch protected control panel with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation and door ajar alarm with potential free contact for remote monitoring. Switch for air-humidity selection, defrost control light and red warning light. Standard equipped with interface RS 485.

Temperature gear by electronic thermostat (sensor protected by safety barrier). The temperature is kept automatically, independently of changes in ambient temperatures.

Compressor, dynamic ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50/60 Hz mains. Other voltages on request. Length of mains cable approx. 1.8 m.

Equipment features at extra charge:

- Power failure alarm (optical and acoustic up to 72 hours)
- Work surface
- Additional shelf or drawer
- GSM-Module
- Castors

Appliances for temperature documentation:

- PC-Kit (USB-Version)
- PC-Kit-Net (Network capable version) incl. documentation software
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- PT 100 or PT 1000 sensor for temperature recording and monitoring via EDP system

---

FROSTER-LABEX-96

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>95 litres</td>
</tr>
<tr>
<td>Temperature setting</td>
<td>app. -5 °C to -25 °C</td>
</tr>
<tr>
<td>Voltage</td>
<td>220 - 240 V, 50/60 Hz</td>
</tr>
<tr>
<td>Power draft</td>
<td>160 Watts</td>
</tr>
<tr>
<td>Average consumption</td>
<td>2.6 kWh/24 h</td>
</tr>
<tr>
<td>Overall dimensions (w x d x h)</td>
<td>54 x 53.5 x 82 cm</td>
</tr>
<tr>
<td>Interior dimensions (w x d x h)</td>
<td>44 x 42 x 47 cm</td>
</tr>
<tr>
<td>Overall dim. with door open at 90°</td>
<td>54 x 105.5 cm</td>
</tr>
<tr>
<td>Shelf dimensions</td>
<td>43.8 x 38 cm</td>
</tr>
<tr>
<td>Max. load per drawer/shelf</td>
<td>13 kg/25 kg</td>
</tr>
<tr>
<td>Weight</td>
<td>net 42 kg, gross 50 kg</td>
</tr>
</tbody>
</table>

---
FROSTER-LABEX-320/-520/-720

- 4 Shelves (FROSTER-LABEX-320)
- 5 Shelves (FROSTER-LABEX-520/-720)
- Recirculating air-cooling (protected via mains supply unit)
- Automatic defrosting
- Rapid freezing cycle
- Digital temperature display

Equipment features at extra charge:
- Power failure alarm (optical and acoustic up to 72 hours)
- Additional drawers or shelves (drawers only for FROSTER-LABEX-520)
- Baskets with rails
  - 56.8 x 40 x 10 cm (FROSTER-LABEX-320),
  - 60 x 45 x 10 cm (FROSTER-LABEX-520),
  - 60 x 65 x 10 cm (FROSTER-LABEX-720).
- Aluminium trays with rails
  - 60 x 40 x 2.5 cm (FROSTER-LABEX-520),
  - 60 x 65 x 2.5 cm (FROSTER-LABEX-720).
- GSM-Module
- Castors
- Cooling machine water-cooled (FROSTER-LABEX-520/-720)

Appliances for temperature documentation:
- PC-Kit (USB-Version)
- PC-Kit-Net (Network capable version) incl. documentation software
- Pen-recording thermometer for placing loosely inside appliance with waxed paper strips
- Disc-type pen recording thermometer with 7-day measuring cycle on top, with 100 recording discs and 5 felt tip pens.
- PT 100 or PT 1000 sensor (incl. safety barrier) for temperature recording and monitoring via EDP system

Outer panels of galvanised sheet steel (protection against sub surface rusting), while powder coated.
Adjustable feet in case of uneven floor.
Interior of smooth aluminium sheet with clear protective coating. Light metal strip with 15 mm raster.
Insulating, 70 mm thick, of highgrade pressure foamed and pro-environmental material. Extra thick for energy saving effect.
Lockable self closing door with plastic magnetic sealing, easy to exchange. Door does not protect at side when opened.
Door hinge changeable (also subsequently), standard version with hinges on right (as illustrated), deliverable also with door hinge on left at no extra charge.
Pressure balance by temporally steered single solenoid valve.
Defrosting automatically with thermal control and time limit function (defrost sensor protected by safety barrier).
During the defrosting period the necessary low temperature is kept.
Melt water tray for manual emptying.
Recirculating air-cooling by means of a axial blower (protected through mains supply unit) which keeps the temperature constant and reduces the natural temperature stratification. The axial blower cuts out automatically when the door is opened, for a minimum loss of cold air.
Key switch protected control panel with digital temperature display, minimum/maximum temperature memory, optical and acoustic warning signal in case of temperature deviation and door ajar alarm with potential free contact for remote monitoring. Switch for air-humidity selection, defrost control light and red warning light. Standard equipped with interface RS 485.
Temperature gear by electronic thermostat (sensor protected by safety barrier). The temperature is kept automatically, independent of changing outside temperatures, provided the ambient temperature is approx. 3 °C above the selected interior temperature.
Compressor, dynamic ventilated, hermetically enclosed, energy saving, low noise, easy to service, for 220-240 V AC, 50 Hz mains. Other voltages on request. Length of mains cable approx. 1.8 m (FROSTER-LABEX-320), approx. 3 m (FROSTER-LABEX-520/-720).

Capacity
Shelves
Voltage
Power draft
Average consumption
Overall dimensions (incl. door handle)
Interior dimensions
Overall dim. with door open at 90°
Shelf dimensions
Drawer inner dimensions
Max. load per drawer/shelf
Weight
<table>
<thead>
<tr>
<th>Feature</th>
<th>FROSTER-LABEX-320</th>
<th>FROSTER-LABEX-520</th>
<th>FROSTER-LABEX-720</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>330 litres</td>
<td>500 litres</td>
<td>700 litres</td>
</tr>
<tr>
<td>Temperature</td>
<td>app. -5 °C to -30 °C</td>
<td>app. -5 °C to -30 °C</td>
<td>app. -5 °C to -30 °C</td>
</tr>
<tr>
<td>Shelves</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Voltage</td>
<td>220 – 240 V, 50 Hz</td>
<td>220 – 240 V, 50 Hz</td>
<td>220 – 240 V, 50 Hz</td>
</tr>
<tr>
<td>Power draft</td>
<td>540 Watts</td>
<td>610 Watts</td>
<td>640 Watts</td>
</tr>
<tr>
<td>Average consumption</td>
<td>4.58 kWh/24 h</td>
<td>7.6 kWh/24 h</td>
<td>8.7 kWh/24 h</td>
</tr>
<tr>
<td>Interior dimensions</td>
<td>w x d x h = 59.5 x 53 x 95 cm (usable depth 12 cm less)</td>
<td>w x d x h = 60 x 57 x 140 cm (usable depth 12 cm less)</td>
<td>w x d x h = 60 x 78 x 140 cm (usable depth 13 cm less)</td>
</tr>
<tr>
<td>Overall dim. with door open at 90°</td>
<td>w x d = 77.7 x 144 cm</td>
<td>w x d = 77.7 x 144 cm</td>
<td>w x d = 77.7 x 165 cm</td>
</tr>
<tr>
<td>Weight net</td>
<td>120 kg</td>
<td>140 kg</td>
<td>165 kg</td>
</tr>
<tr>
<td>Weight gross</td>
<td>135 kg</td>
<td>170 kg</td>
<td>200 kg</td>
</tr>
<tr>
<td>Shelf dimensions</td>
<td>w x d x h = 57.4 x 40 x 5.6 cm</td>
<td>w x d x h = 60 x 78 x 140 cm (usable depth 13 cm less)</td>
<td>w x d x h = 60 x 78 x 140 cm (usable depth 13 cm less)</td>
</tr>
<tr>
<td>Max. load per drawer/shelf</td>
<td>24 kg/40 kg</td>
<td>46 kg</td>
<td>46 kg</td>
</tr>
<tr>
<td>Weight of interior</td>
<td>120 kg, gross 135 kg</td>
<td>net 140 kg, gross 170 kg</td>
<td>net 165 kg, gross 200 kg</td>
</tr>
</tbody>
</table>
Equipment

For temperature documentation
- Analysis / Monitoring
- With the single-user version, the gateway is connected to the PC through a USB interface. The network version is connected to the existing network port using Ethernet cable.
- Interface RS 485
- An integrated rechargeable battery guarantees that the data continues to be recorded for up to 72 hours in the case of a power-outage.

Temperature evaluation, monitoring and documentation as a single-user version or for integration in an existing network: simple, fast and Windows-compatible
the Kirsch-datanet captures, evaluates and documents recorded data – a program for capturing and visualising analogue and digital measurement data. The recorded data can be exported to other programs and send by e-mail.
You will find an overview of the most important program parts inside the brochure or on our website www.kirsch-offenburg.de. Full instructions are included on the CD.

Disc-type pen-recording thermometer
- Installed permanently in the refrigerator or freezer
- Independent of mains supply
- Measuring range: -35 °C to +15 °C or -60 °C to +25 °C
- 7-day-period

Pen-recording thermometer
- Placing loosely inside appliance
- No installation work necessary
- Independent of mains supply
- Measuring range: -40 °C to +25 °C
- Maximum range of recording period per strip: 32 days

Preparation for recording temperatures externally
A 4-wire PT-sensor that complies with DIN IEC 751, class 1/3 B is used here. Via appropriate interfaces on site, e.g. RS 232, the sensor can be connected to a computer system or another local temperature analysis unit.
Transmission of alarm messages by SMS

- An optical and acoustic alarm is triggered and an SMS alarm message is sent.
- Freely definable SMS text messages
- Buffer of 72 hours in case of power-failure

An activated SIM card is needed. The GSM module enables the transmission of alarm messages by mobile phone or fixed network, using SMS. An activated SIM card is needed for this. There must be sufficient reception strength at the installation location.

The connection to the GSM module is done via potential-free contact in a refrigerator or freezer. The GSM module has two digital inputs allowing two refrigerators or freezers to be connected at the same time.

Minimum and maximum temperature limits between -50 °C and +50 °C can be assigned to the analogue input and an alarm is triggered if the temperature goes below or above the limit respectively. The alarm profiles and SMS message texts are assigned in the same way as digital inputs. One of three profiles is assigned to the two digital inputs. Each SMS message text can be considered with a maximum length of 100 characters.

The module is equipped with an exchangeable li-ion battery to buffer the unit in the case of a power-failure.

You will find an elaborated description on our GSM module flyer or on our following website: www.kirsch-offenburg.de.

Cooling machines with cold water connection

There are cooling machines with heat exchanger for cold water connection available for some models for special cases.

Interior equipment

Shelves / Drawers

The sturdy PE-coated wire shelves have a loading-bearing capacity of approx. 40 Kg. The height of some of the model-specific optimized drawers can be adjusted, and they have adjustable depth and width separators. Thus ensuring tidy, clearly arranged storage.

Special accessories

The special accessories are numerous and cannot all be listed here. Just let us know what you need and we will try to accommodate your request.

Phone: 0049-781-9227-0
We have made every effort to describe the appliances in this catalogue in an understandable manner. We appreciate the fact that despite the accuracy and care taken in compiling the catalogue – further questions may arise in practice in connection with these top-quality technical products. Please call us if you have any further queries; we are confident that we will be able to help you. In addition, we work constantly on the further development of all our types and models and we are therefore sure you will appreciate that our product descriptions are subject to design, equipment and technical changes.

Blood Bank Refrigerators
Blood Plasma Freezers
Pharmaceutical Refrigerators / Freezers
Laboratory Refrigerators/ Freezers
Refrigerators and Freezers with explosion-proof interior

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