



Refrigerators
Pharmacy
2015 / 2016

LIEBHERR

Quality, Design and Innovation



Pharmacy refrigerators compliant with DIN 5834

Refrigerators for use in pharmacies, hospitals and surgeries must meet very stringent requirements for the storage of pharmaceutical products. Liebherr pharmacy refrigerators compliant with DIN 58345 are therefore equipped with many functions and features to ensure optimum protection of high-quality preparations and sensitive pharmaceutical products. The flush-mounted electronic controller enables accurate temperature control and creates optimum storage conditions in conjunction with highly effective insulation and the forced-air cooling system. Integrated visual and audible alarm systems warn the user of undesired temperature deviations. Liebherr refrigerators offer the safety and consistency that are essential for the storage of pharmaceutical products: 24 hours a day, 365 days a year.

Safety compliant with DIN 58345

All Liebherr medical storage appliances comply with the DIN standard "Refrigerators for drugs DIN 58345". This guarantees that the appliances are particularly suitable for medicine storage and that they offer the highest standard for conscientious users.

DIN 58345 includes the following basic requirements:

- Maintenance of an operating temperature from +2 °C to +8 °C
- Can be used in ambient temperatures from +10 °C to +35 °C
- Noise emission less than 60 dB(A)
- Visual and audible warning installation for high and low temperature alarms
- Preparation of operating temperature recording
- Visual and audible power failure alarm for at least 12h
- Safety thermostat to avoid temperatures below +2 °C
- Mechanical resistance of internal fittings at least 100 kg/m²
- Lockable door

Good reasons to choose Liebherr



Highest performance

Liebherr medical storage refrigerators offer constant refrigeration performance and maximum temperature consistency. The use of ultra-modern components, efficient and environmentally friendly refrigerants as well as precision controls ensures that pharmaceutical products and medicines are stored correctly. Optional monitoring software continuously logs the temperature profile – and if required, warning systems alert the user when defined temperature limits are exceeded.

Efficiency

Highly efficient with low energy consumption: the precision electronic controller, the forced-air refrigeration system and highly effective insulation guarantee low operating costs – and are eco-friendly as well. The high quality of the appliances guarantees long life and reliable operation and provides for economic and ecological sustainability of medicine storage.

Sturdy quality

Liebherr appliances are specially constructed for intensive professional use and feature a very sturdy design – with highest-quality materials and perfect workmanship right down to the smallest detail. The quality of the appliances is ensured by elaborate tests. Safety is given top priority in every pharmacy model. Many features ensure that pharmaceutical products are always protected – for example the sturdy wire shelves have a loading capacity of up to 45 kg.

Easy cleaning

Hygiene plays a special role in medicine storage. That is why Liebherr appliances are equipped with moulded inner liners with large radii that are easy to clean. The shelves can easily be removed and cleaned. And the flush-mounted electronic controller with a membrane keypad is extremely resistant to soiling. 30 mm high roller sets can be retrofitted to the table-height MKUv models and adjustable legs can be retrofitted to the MKv models to allow easy cleaning underneath.

Safety

Extremely safe and reliable: because stringent requirements with regard to temperature consistency must be met for the storage of pharmaceutical products, Liebherr appliances are equipped with many useful functions. A visual and audible alarm alerts the user to temperature deviations – and if the door is open for longer than 1 minute. The appliances are equipped with a volt-free contact for alarm forwarding to an external remote warning system. In addition, they have an RS 485 serial interface which enables as many as 20 appliances to be networked with a central documentation and alarm system.

Easy servicing

Durability and reliability are given top priority in the material selection and development of Liebherr appliances. Their quality and functionality are ensured by elaborate tests. The LED ceiling lighting with a separate switch on glass door appliances provides for optimum illumination and allows fast access to the pharmaceutical products. To prevent unnecessary loss of cold air, the door is self-closing. The inner liners are designed with large corner radii for easy cleaning. Variable wire shelves enable easy and individual organisation of the interior.

The advantages at a glance



Volt-free contact on pharmacy refrigerators with Comfort electronic controller for forwarding alarms to an **external remote warning system**.



Visual and audible temperature alarms alert the user if the set temperature deviation limits of +2 °C and +8 °C are exceeded.

The **moulded inner liner** is exceptionally easy to clean and enables **perfect hygiene**.

The **evaporator cover** prevents contact between the **stored pharmaceutical products** and the cold evaporator surface.



The **plastic-coated wire shelves** provide support for products, are easily adjustable in height and can be removed at a door opening angle of 90°.

Pharmacy refrigerators comply with **DIN 58345** for the storage of pharmaceutical products.



Access port (diameter 10 mm) on pharmacy refrigerators with a Comfort electronic controller allows **integration of an external temperature sensor** (e.g. PT 100 or similar measuring sensors).



The precision **Comfort electronic controller** features an accurate 1/10 °C temperature display.



LED ceiling light with separate switch in pharmacy refrigerators with glass door MKv 3913 and MKUv 1613.



The precision Comfort electronic controller has an **integrated data memory**. It logs e.g. the maximum and minimum internal temperatures that occur once the set temperature is reached.



Temperature is set at the factory to +5 °C. The pharmacy refrigerators are equipped with a **safety thermostat** to prevent temperatures below +2 °C in case of a malfunction. This prevents sensitive products from being destroyed.

Self-closing doors for convenient use. The integrated lock is very sturdy and protects the stored products against unauthorised access.



In case of power failure, the electronic controller is immediately supplied by an **integrated 12 V battery** and indicates the failure optically and audibly for at least 12 hours.

MKv 3913

Quality right down to the smallest detail

Liebherr medical storage refrigerators comply with DIN 58345. A visual and audible alarm alerts the user to temperature deviations or a power failure. The safety thermostat prevents temperatures below +2 °C. All appliances are equipped with a volt-free contact

for alarm forwarding to an external remote warning system. The inner liner with the individually height-adjustable, sturdy wire shelves is easy to clean and enables perfect hygiene. This ensures safe storage of your pharmaceutical products.



The Comfort electronic controller.

The precision Comfort electronic controller features a 1/10 °C temperature display. Symbols indicate the operating status of the appliance. To ensure hygiene, the electronic controller is flush-mounted and features a membrane keyboard. The temperature is set to +5 °C at the factory. The pharmacy refrigerators are equipped with a safety thermostat to prevent temperatures below +2 °C in case of a malfunction.



Integrated alarm systems.

Visual and audible alarm systems alert the user to undesired temperature deviations or when the door is open. All alarm parameters are pre-set in accordance with DIN 58345 requirements. The door-open alarm delay can be adjusted between 1 and 5 minutes. Additional safety is provided by a visual power failure alarm and sensor defect alarm.



Integrated data memory.

The Comfort electronic controller has an integrated data memory which logs the maximum and minimum internal temperatures as well as the last three temperature alarms and power failures, together with the time, date and duration. These data can be read out on the display.



External temperature sensor.

The pharmacy refrigerators have an access port (diameter 10 mm) on the rear which allows a temperature sensor to be positioned in the interior.

External temperature and alarm documentation.

The pharmacy refrigerators are equipped with a volt-free contact for alarm forwarding to an external remote warning system, as well as with a serial interface RS 485 which enables central documentation of temperature profiles and alarm events (optionally available).

Safety compliant with DIN 58345.

Liebherr medical storage refrigerators comply with the standard "DIN 58345". Therefore they are able to store pharmaceutical products at an operating temperature from +2 °C to +8 °C. Visual and audible alarm systems alert the user to undesired temperature deviations and power failures. A safety thermostat prevents temperatures below +2 °C. In addition the appliances can be used in ambient temperatures from +10 °C to +35 °C – and can be locked to prevent unauthorised access.



Hygienic interior for versatile use.

Added hygiene: the seamless inner liner is exceptionally easy to clean. Moulded trayslides prevent the grid shelves from tipping and allow flexible height adjustment in increments of 32 mm. The evaporator cover prevents pharmaceutical products from freezing onto the rear wall.



Close-mesh wire shelves.



The plastic-coated shelves have an extremely high loading capacity of up to 45 kg. They are easily adjustable in height and can be removed at a door opening angle of 90°. Their close-mesh design ensures secure storage even for small items.



LED ceiling lighting.

The appliances with glass door (MKv 3913, MKUv 1613) have a LED ceiling light with separate switch. It ensures uniform illumination of the interior and enables fast, direct access to the stored pharmaceutical products



| Pharmacy refrigerators compliant with DIN 58345 | MKv 3913 MediLine  | MKv 3910 MediLine | MKUv 1613 MediLine  | MKUv 1610 MediLine |
|---|--|---|---|---|
| Total gross / net capacity | 360/281 litre | 360/300 litre | 141 / 115 litre | 141 / 116 litre |
| Exterior dimensions in mm (w/d/h) | 600/615/1840 | 600/615/1840 | 600/615/820 | 600/615/820 |
| Interior dimensions in mm (w/d/h) | 440/435/1635 | 440/435/1635 | 440/435/670 | 440/435/670 |
| Energy consumption in 24 h * | 1.315 kWh | 0.846 kWh | 1.010 kWh | 0.747 kWh |
| General | | | | |
| Cooling system / Defrost | forced-air / automatic | forced-air / automatic | forced-air / automatic | forced-air / automatic |
| Temperature range | +5°C | +5°C | +5°C | +5°C |
| External cabinet finish | steel / white | steel / white | steel / white | steel / white |
| Door / lid material | glass door | steel | glass door | steel |
| Internal liner material | commercial grade moulded polystyrol | commercial grade moulded polystyrol | commercial grade moulded polystyrol | commercial grade moulded polystyrol |
| Type of control | electronic controller | electronic controller | electronic controller | electronic controller |
| Temperature display | external digital | external digital | external digital | external digital |
| Power failure alarm | immediately upon power failure for at least 12hrs | immediately upon power failure for at least 12hrs | immediately upon power failure for at least 12hrs | immediately upon power failure for at least 12hrs |
| Fault: warning signal | visual and audible | visual and audible | visual and audible | visual and audible |
| Interface / Volt-free alarm contact | RS 485 / yes | RS 485 / yes | RS 485 / yes | RS 485 / yes |
| Interior light | LED lighting, with separate switch | | LED lighting, with separate switch | |
| Adjustable shelves | 5 | 5 | 3 | 3 |
| Usable shelf area in mm (w / d) | 440 / 420 | 440 / 420 | 440 / 420 | 440 / 420 |
| Shelf material | wire shelves plastic-coated | wire shelves plastic-coated | wire shelves plastic-coated | wire shelves plastic-coated |
| Shelf loading | 45 kg | 45 kg | 45 kg | 45 kg |
| Handle | ergonomic slimline handle | ergonomic slimline handle | ergonomic slimline handle | ergonomic slimline handle |
| Lock | fitted | fitted | fitted | fitted |
| Self-closing door | yes | yes | yes | yes |
| Door hinges | right, reversible on site | right, reversible on site | right, reversible on site | right, reversible on site |
| Gross / net weight | 91 / 85 kg | 71 / 66 kg | 46 / 43 kg | 40 / 37 kg |
| Climate rating | SN | SN | SN | SN |
| Sound power level | 48 dB(A) | 48 dB(A) | 45 dB(A) | 45 dB(A) |
| Refrigerant | R 600a | R 600a | R 600a | R 600a |
| Voltage / Connection rating | 220–240V~ / 1.5 A | 220–240V~ / 1.5 A | 220–240V~ / 1.0 A | 220–240V~ / 1.0 A |
| Accessories | | | | |
| Shelf, plastic-coated | 7112313 | 7112313 | 7112313 | 7112313 |
| Stacking kit, white | | | 9876687 | 9876687 |
| Roller bars | | | 9590521 | 9590521 |
| Adjustable legs | 9590233 | 9590233 | | |
| RS 485 / RS 232 adapter, data log software | 9590387 | 9590387 | 9590387 | 9590387 |
| Additional lock barrels (up to 10) | on request | on request | on request | on request |

* measured at +25 °C ambient temperature and +5 °C set temperature

Plastic-coated wire shelves

Additional plastic-coated shelves can be retrofitted as required to provide extra storage options. They have an extremely high loading capacity of up to 45 kg.



Stacking kit

A stacking kit is available as an accessory for combining the MKUv 1613 and MKUv 1610 models as well as other table-height appliances in the Liebherr research and laboratory range. This allows stacking a glass door appliance and solid door appliance or a refrigerator and freezer on a small footprint.



Roller bars and adjustable legs

30 mm high roller bars can be retrofitted to the table-height MKUv models and adjustable legs can be retrofitted to the MKv models to allow easy cleaning underneath. The legs are adjustable between 115 mm and 170 mm in height.



Interface converter with monitoring software

A special interface converter including LTM monitoring software is available for central documentation of the temperature profile data and alarm events of multiple appliances via the RS 485 serial interface. Capability is provided for interconnecting as many as 20 appliances and centrally documenting their parameters. Alarm forwarding or regular status reports to up to three email addresses can be configured as an additional feature. Commercially available converters can also be used to connect the connected appliances to a PC via WLAN or LAN. Software requirements: PC with Windows® operating system.



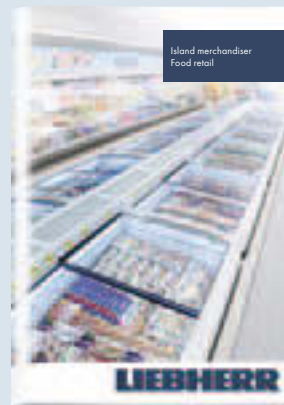
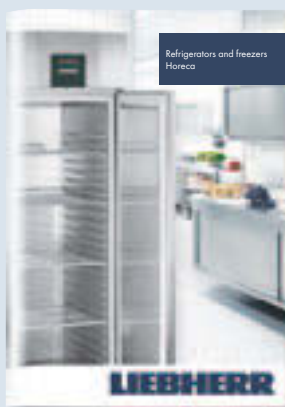
Additional lock barrels

Up to 10 additional lock barrels to protect the stored products against unauthorised access are available as accessories for the pharmacy refrigerators with the Comfort electronic controller. In case of multiple appliances, different locks can be installed to ensure that the respective appliance can only be accessed by the staff members responsible for it.



Liebherr commercial appliances can be found at specialist retailers where providing first-class service and expert advice is their top priority.

You can find an overview of all Liebherr appliances in our main catalogues. Available in stores or on www.liebherr.com.



Smart communication on all fronts



Media App

Download all catalogues and videos to your tablet quickly and easily for instant offline access.



WineGuide App

A brief overview of Bordeaux wines and their producers, plus storage information.



apps.home.liebherr.com

Find out which app is available for which operating system (Apple, Android etc.), and which device type.



The Liebherr-Hausgeräte YouTube channel provides interesting and helpful films showing you the functions of Liebherr refrigerators and freezers.

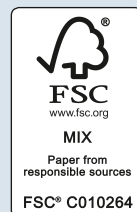


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