



Refrigerators
Pharmacy
2016/2017

LIEBHERR
Quality, Design and Innovation



Pharmacy refrigerators compliant with DIN 58345

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

Climate class definitions

Climate class SN: Ambient temperatures from +10°C to +32°C

Climate class N: Ambient temperatures from +16°C to +32°C

Climate class ST: Ambient temperatures from +16°C to +38°C

Climate class T: Ambient temperatures from +16°C to +43°C

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

Total gross / net capacity
Exterior dimensions in mm (w/d/h)
Interior dimensions in mm (w/d/h)
Energy consumption in 365 days ¹
Climate rating
Refrigerant
Sound power level
Voltage/Connection rating
Cooling system /Defrost
Temperature range
External cabinet finish
Door /lid material
Internal liner material
Type of control
Temperature display
Power failure alarm
Fault: warning signal
Interface /Volt-free alarm contact
Interior light
Adjustable shelves
Usable shelf area in mm (w/d)
Shelf material
Shelf loading
Handle
Lock
Self-closing door
Door hinges
Gross / net weight
Accessories
Shelf, plastic-coated
Stacking kit, white
Roller bars
Adjustable legs
RS 485/RS 232 adapter, data log software
Additional lock barrels (up to 10)

MKv 3913 MediLine	LED	MKv 3910 MediLine	MKUv 1613 MediLine	LED	MKUv 1610 MediLine
360/281 litre		360/300 litre	141/115 litre		141/116 litre
600/615/1840		600/615/1840	600/615/820		600/615/820
440/435/1635		440/435/1635	440/435/670		440/435/670
480 kWh		309 kWh	369 kWh		273 kWh
SN		SN	SN		SN
R 600a		R 600a	R 600a		R 600a
48 dB(A)		48 dB(A)	45 dB(A)		45 dB(A)
220–240V~ / 1.5 A		220–240V~ / 1.5 A	220–240V~ / 1.0 A		220–240V~ / 1.0 A
forced-air / automatic		forced-air / automatic	forced-air / automatic		forced-air / automatic
+5°C		+5°C	+5°C		+5°C
steel / white		steel / white	steel / white		steel / white
glass door		steel	glass door		steel
commercial grade moulded polystyrol		commercial grade moulded polystyrol	commercial grade moulded polystyrol		commercial grade moulded polystyrol
electronic controller		electronic controller	electronic controller		electronic controller
external digital		external digital	external digital		external digital
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
visual and audible		visual and audible	visual and audible		visual and audible
RS 485/yes		RS 485/yes	RS 485/yes		RS 485/yes
LED lighting, with separate switch			LED lighting, with separate switch		
5		5	3		3
440/420		440/420	440/420		440/420
wire shelves plastic-coated		wire shelves plastic-coated	wire shelves plastic-coated		wire shelves plastic-coated
45 kg		45 kg	45 kg		45 kg
ergonomic slimline handle fitted		ergonomic slimline handle fitted	ergonomic slimline handle fitted		ergonomic slimline handle fitted
yes		yes	yes		yes
right, reversible on site		right, reversible on site	right, reversible on site		right, reversible on site
91/85 kg		74/68 kg	46/43 kg		41/39 kg
7112313		7112313	7112313		7112313
			9876687		9876687
			9590521		9590521
9590233		9590233			
9590387		9590387	9590387		9590387
on request		on request	on request		on request

¹ Measured at +25°C ambient temperature and +5°C set temperature

Shelves plastic-coated

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.



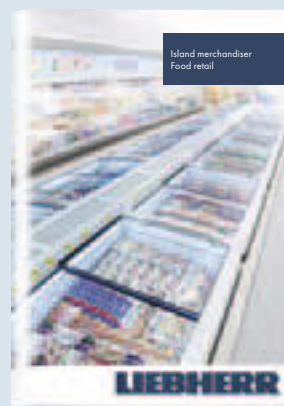
Additional lock barrels

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 home.liebherr.com.



Smart communication on all fronts



Media App

Download all catalogues and videos to your tablet quickly and easily for instant off line 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.



News, product launches and special promotions can be found on our Facebook page, the Liebherr blog, on Instagram and Pinterest.



socialmedia.home.liebherr.com

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