Laboratory & pharmacy 2021

LIEBHERR

Fridges & freezers

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Quality, Design and Innovation

As a specialist for fridges and freezers, Liebherr offers an extensive range of robust special appliances for commercial use. The unique quality, timeless design and innovation that characterise our products are expressions of our many years of experience in the manufacture of modern refrigeration. Every day, Liebherr appliances allow our customers to experience and benefit from the expertise we have developed over decades in the commercial field.

Quality

For more than 60 years, the name Liebherr has stood for high-quality and innovative fridges and freezers. Our focus, from the product conception to development and production through to marketing, is on offering innovative top-quality products. In the process, we consistently implement new product ideas for the perfect and safe storage of foods and of sensitive samples, medication or research materials in laboratory use. We are familiar with the specific requirements and know what is needed to ensure that you can rely on your professional fridge or freezer one hundred percent, 24 hours a day, and 365 days a year. We conduct checks as early as the development stage to ensure that all refrigeration, mechanical and electronic components function dependably and over the long term, and we also make sure that optimal operability and operational reliability of appliances is guaranteed. For example, in the quality test, door hinges must complete at least 100,000 opening cycles – equivalent to usage of over 15 years. A visual inspection of processing quality also occurs. This helps us to ensure the optimal compatibility of all components with one another: for maximum functionality and efficiency.

Design

Liebherr appliances for professional use are characterised by a specific combination of aesthetics and functionality. With their elegant and timeless design, the fridges and freezers meet the highest aesthetic standards. The high-quality look of our commercial appliances shows itself in many details: from stainless steel processing to a selection of high-quality materials and to the interior features. Thanks to their consistent design, our professional appliances can be easily combined and also really catch the eye.

Innovation

The constant development of our high-quality products is particularly important to us. That is why all Liebherr production sites have development centres with modern equipment and highly qualified employees. We invest in research and development because only then can we truly offer our customers top quality in the long term, while simultaneously meeting our own high standards. Our aim is to be "best in class" in every aspect. Innovations, whether in refrigeration technology, convenience or safety, have always been an important and supporting pillar in our history and will remain so in future as well. With great dedication and passion we work hard to incorporate innovations into our appliances in order to set new standards in the field of professional fridges and freezers. Last but not least, our appliances for commercial use are highly efficient thanks to state-of-the-art electronics combined with optimised cooling circuits, so they make a considerable contribution towards economic and ecological sustainability.

The Liebherr Group

Material Handling

Mining

Mobile Construction Cranes

Tower Cranes

Concrete Technology

Maritime Cranes

Aerospace & Transportation Systems

Machine Tools and Automation Systems

Components

Hotels

Refrigeration & Freezing

The Liebherr Group was established in 1949 by Dr Hans Liebherr. In a company history spanning more than 70 years, the Liebherr family business has demonstrated stability and reliability. Liebherr is one of the biggest manufacturers of construction equipment and is also successfully active in many other industries. The Group has a decentralised organisation with more than 48,000 employees worldwide and is divided into independently operating business units.

The Group now covers eleven product divisions: earth moving, mining, vehicle cranes, tower cranes, concrete technology, maritime cranes, aerospace and traffic technology, machine tools and automation systems, refrigeration domestic appliances, components and hotels with more than 140 companies on all continents. The holding company of the Group is Liebherr-International AG in Bulle / Switzerland, all of whose shareholders are members of the Liebherr family.

The Domestic Appliances division was established at the Ochsenhausen site in 1954 and has for many years played an important role in the development of the Group. For more than 60 years Liebherr-Hausgeräte has been a premium manufacturer of innovative fridges and freezers for private households and for commercial use; with annual production exceeding 2.2 million appliances, we are one of the leading European suppliers of fridges. The five production sites in Ochsenhausen (Germany), Lienz (Austria), Radinovo (Bulgaria), Kluang (Malaysia) and Aurangabad (India) form a manufacturing network for fridges and freezers that meets the most modern of standards. Liebherr-Hausgeräte is active around the world: with an extensive network of sales companies and offices in Bulgaria, Germany, the United Kingdom, Austria, Canada, Malaysia, Russia, Switzerland, Singapore, South Africa and the USA, the specialist in refrigeration ensures that customers receive competent advice and that professional service and maintenance work is provided on site.

Save energy
and act sustainably

Perfect quality assurance –
logged temperature measurement

As a family business operating globally, Liebherr bears great responsibility towards society, the environment, customers, employees and suppliers. Going beyond regulations and legislation, the environmental effects of products and production sites are reduced and kept to a minimum. This is why a responsible and sustainable approach to energy is especially important to Liebherr in all development processes.

Whether for biotechnology, pharmaceutical research or healthcare, professional Liebherr fridges and freezers are used wherever stringent requirements for storage safety and temperature consistency apply. Integrated alarm systems document the temperatures, alert the user of deviations and offer optimum safety.

Energy efficiency has always been a central issue for Liebherr, and it has a decisive effect even during the design of fridges and freezers for professional use. High-quality components allow the appliances to provide excellent cooling. Tailored for professional use, these components also help lower electricity costs. With our products, the concept of protecting the environment is taken into account throughout the life cycle. Liebherr was the first company to convert its entire range of professional fridges and freezers to CFC-free and HFC-free refrigerants. Since then we have been using the natural and environmentally friendly refrigerants R 290 and R 600a. In combination with powerful compressors and modern cooling components, they ensure that our appliances for professional use are particularly energy-efficient and economical.

The plastics used are marked for optimal recycling in accordance with our specifications as per ISO 1043, and our production processes are also arranged for efficient resource use. We would like to have become climate neutral at our European production sites by 2030. We have already, within two years, been able to reduce our CO_2 emissions by 62 percent. At an early stage, suppliers and service providers are integrated into the current quality and sustainability standards. Our integrated management system serves to fulfil these requirements and to achieve the objectives sought. Its effectiveness is regularly checked by audits. All European Liebherr production sites are certified according to the international standards for quality (ISO 9001), environmental management (ISO 14001) and energy management (ISO 50001). Since September 2019, Liebherr has also been awarded the silver status in EcoVadis for sustainable performance at the Lienz plant.

The dynamic cooling system in laboratory and pharmaceutical appliances, in combination with precise electronics, guarantees maximum temperature stability in the interior. In addition, very short defrost cycles avoid the risk of temperature spikes. Liebherr laboratory appliances are designed for optimal temperature stability and consistency as per EN 60068-3 in order to ensure the best storage conditions for sensitive samples and medication. They are also equipped with a volt-free contact to relay alarms to an external remote monitoring system. In addition, they feature a serial interface RS 485 for central documentation of temperature curves and possible alarm events. Up to 20 appliances can thus be connected to a central documentation and alarm system in order to provide greater safety. The integrated data memory documents and saves the min. / max. values for up to 41 days.

Worldwide comprehensive service – long-term availability of spare parts

Verified quality for the highest professional standards

Liebherr service is characterised by a strong customer focus. The main aim is to ensure customer satisfaction through fast processing. The worldwide Liebherr customer service network provides competent experts on all matters relating to service – via email, phone or mail.

A great deal of know-how, development work and attention to detail is invested in every single Liebherr appliance. Before an appliance goes into series production, engineers have completed months of research and development to ensure that a high quality product is created which meets all the requirements of professional use.

As a manufacturer of high-quality fridges and freezers for professional use, we want to live up to our standard of being a competent and reliable partner, and when it comes to servicing and customer service as well. That is what Liebherr customers expect from us, and we want to justify it with our performance. All incoming questions, whether asked in writing or in person, are recorded in our customer database and processed quickly by our customer service employees, who are highly qualified master craftsmen and technicians. We always aim to offer our customers the best possible solution.

Liebherr stands for reliability and durability. That is why we use only the highest quality materials and components in production. Every appliance is tested intensively for quality and functionality, even during the production process. We are always working to develop our appliances, optimise all components and process them properly to the last detail, so we can guarantee the proverbial Liebherr quality with the long durability of our appliances. And if you should still need a spare part for our appliances with their essentially maintenance-free design, you can rely on our service at all times. We provide only original Liebherr spare parts – in most cases for up to ten years after the appliance was purchased.

As a premium manufacturer we have something essential in common with our customers: we set the highest possible standards for our appliances and components. The quality of Liebherr appliances is a solid foundation for the high level of trust that customers have in the Liebherr brand. At our production locations, we are working constantly on the further development and optimisation of all appliance components and materials. Our professional appliances and components undergo continuous quality monitoring throughout the entire production process. In order to guarantee these high standards of quality, we subject all components to extreme loads in extensive and practical testing. In doing so, we ensure that only the highest quality appliances, which fully meet the particular requirements for commercial use, leave our production locations. Our highly-qualified and well-trained employees are also a central factor here. Thanks to their dedication and commitment, Liebherr continues to set high standards and guarantee outstanding quality. No wonder then that customers around the world are impressed by the durability of our fridges and freezers.

Symbol picture

Good reasons
to choose Liebherr
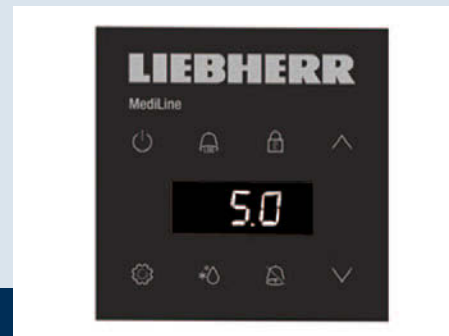
Highest performance

Liebherr appliances for the laboratory and pharmacy sectors offer constant cooling even in extreme ambient temperatures. The use of ultra-advanced components, high-performance and environmentally-friendly refrigerants, and precision controls ensures optimal storage for chemicals and research materials, medication and sensitive samples. Thanks to innovative hot-gas defrosting, they need to be defrosted less often. The process is also considerably quicker and temperature spikes are avoided. Optional documentation 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 precise electronic controller, the dynamic 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.

Reliability

All laboratory appliances are designed according to the EN 60068-3 standard with regard to maximum temperature stability. They 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 exemplary quality of the appliances is ensured by elaborate tests. All electronic and refrigeration components are optimally coordinated – perfect for use in the laboratory and pharmacy sectors.

Easy cleaning

Hygiene and easy cleaning play a special role in research, in laboratories and in the medical sector. That is why Liebherr appliances feature, among other things, moulded inner liners with large radii that are convenient to clean. High-quality seals prevent condensation, dirt and dust accumulation. Robust castors ensure that the surfaces under the appliances can also be easily cleaned.

Safety

In order to meet the highest standards for reliability and precise temperature consistency, Liebherr appliances are equipped with integrated alarm systems: If unwanted temperature fluctuations occur, a visual and audible alarm provides a warning – as it does if the door is opened for more than 1 minute. A visual power failure alarm and a sensor defect alarm provide additional safety. The appliances can be connected via the volt-free contact to an external remote warning system – and up to 20 appliances can be networked with a monitoring and alarm system via the serial interface RS 485. In case of a power failure, the electronic controller is powered by a battery for 12 hours (on MKv and MKUv) respectively 72 hours (on LKPv and LGPv) to prevent data loss. The calibration option allows precise temperature control adapted to specific applications. On MKv and MKUv models all alarm parameters are pre-set as per the requirements of DIN 58345.

Easy servicing

Durability and reliability are given top priority in the material selection and development of Liebherr laboratory appliances. The exemplary quality and easy usability of the appliances are ensured by elaborate tests. In appliances with ceiling-mounted cooling components, these components are integrated in an easily accessible way. The door remains open at 90° and is self-closing at less than 60° for convenient use. The interior is easy to clean. The variable adjustment of grid shelves also allows optimum utilisation of the space. The separately controlled LED ceiling lighting on glass-door appliances ensures the best possible illumination. You therefore quickly gain an overview of the contents.

Maximum efficiency and safety at the lowest temperatures

Fridges and freezers used in laboratories and research have to meet particularly high requirements. This is why our devices have numerous functions and features – especially for safety, performance, temperature consistency and ease of use – to ensure ideal storage of sensitive samples, chemicals and research materials. And our new series of ultra-low temperature (ULT) freezers set new standards – especially in the -40 °C to -86 °C temperature range. Take advantage of the low operating costs, sustainable refrigeration, large interior space and numerous safety functions of the ULT freezers. Put your trust in our extensive experience as specialists in refrigeration and freezing. Our refrigerators and freezers offer you the safety that is essential in the laboratory and research sector – 24 hours a day, 365 days a year.

Laboratory

The advantages at a glance

Door seal concept
The innovative door seal concept, comprising two separate multi-chamber profiled gaskets, enables fully sealed closure of the door. This also helps to reduce energy consumption. The seals can be replaced separately and without tools.

Active Green

ActiveGreen
State-of-the-art refrigeration technology with climate-neutral refrigerants and lowest energy consumption thanks to, among other things, the extensive use of high-quality vacuum insulation panels.

Detachable stainless steel inner doors
The detachable, rust-proof, stainless steel inner doors reduce the loss of cold air when the outer door is opened and are also easy to clean.

Interior/storage shelves/inner doors
The interior, shelves and inner doors are made of rust-proof stainless steel and are therefore easy to clean. This enables optimum hygiene.

Alarm messages in critical situations
The three-stage monitoring system consisting of integrated alarm notifications for temperature, door or mains electrical faults, upgradable features such as CO_2 emergency cooling and online monitoring, ensure the very best protection for your stored items. In the event of a power failure, integrated 12-volt batteries immediately supply the controller with power. Notification is provided in critical situations.

Flexibly positionable stainless steel storage shelves
Three storage shelves in the interior, which are freely adjustable at increments of 24 mm, offer flexibility for space-saving storage, tailored to your requirements. Further storage shelves can be added as an option.
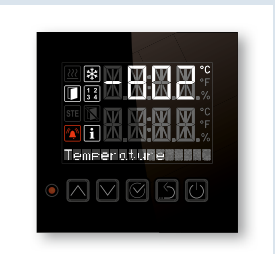
Integrated controller
The intuitive controller with an integrated real-time clock has a temperature setting option accurate to 0.1 °C. The control and display panel is resistant to dirt and easy to clean. Flexible parameter adaptations, such as offset and alarm value settings, allow the appliances to be quickly and easily adapted to and qualified for your applications and requirements.

Volt-free contact
Volt-free contact for relaying alarms to an external remote monitoring system – for more safety.

2 x access ports, 28 mm
Two access ports on the upper left and lower left let you install external monitoring or data recording systems with separate sensors in the interior.

Highly efficient insulation
The combination of CFC-free PU foam with high-quality vacuum-insulated panels ensures the best possible insulation for preventing rapid temperature increases and ensuring low energy consumption.

Integrated unloading ramp
No forklift necessary: The unloading ramp integrated in the packaging helps you easily position the appliance.

Pressure relief valve
When the door is opened, the air exchange creates a vacuum which makes it difficult to open the door repeatedly. With the aid of the heated pressure relief valve, the vacuum is quickly equalised and the door can easily be opened again after just a few seconds.

SUFsg 5001

Laboratory

Quality right down to the smallest detail

Liebherr's ultra-low temperature freezers (ULT) set the benchmark in the temperature range -40 °C to -86 °C: In terms of safety, performance and ease of use, they offer all you need for meeting the demanding requirements of laboratories and scientific institutions, for example. Take advantage of the low operating costs, sustainable cooling, the large interior with practical features and the numerous safety functions of the ultra-low temperature freezers. Place your trust in our extensive experience as a specialist in cooling and freezing.
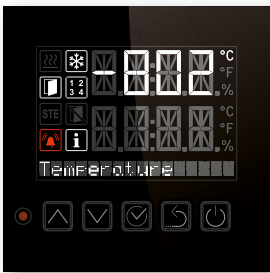
Alarm messages in critical situations.
Don't worry about security: Thanks to a three-stage monitoring system, consisting of integrated alarm messages for temperature, door or mains faults, upgradable features such as CO_2 emergency cooling and online monitoring ensure the very best protection for your stored samples at all times. In the event of a power failure, integrated 12-volt batteries immediately supply the electronics with power. You will also be notified in critical situations so that you can quickly rectify the fault.
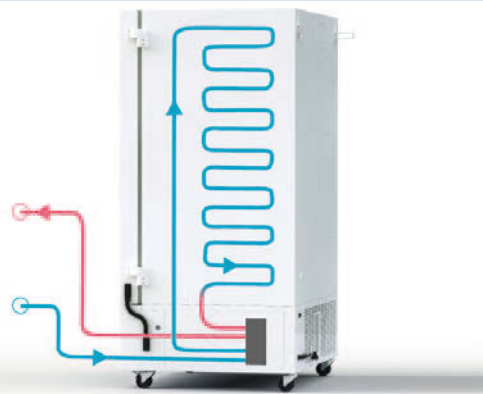
Low heat emission.
Compared to older technologies, the efficient cascade cooling system with HC refrigerants generates significantly less heat. This saves costs in the thermal design of the room's air conditioning system. If heat dissipation via the room air conditioning is not possible, the option with water cooling is also available.

Mechanical key lock.
The mechanical key lock protects the stored products from unauthorised access.
The door is opened with an ergonomic and unbreakable aluminium lever handle.

Active Green

Low energy consumption.
Ultra-low temperature freezers are among the appliances with the highest energy consumption in research facilities. Liebherr ultra-low temperature freezers are among the most economical models on the market worldwide. In combination with highly insulating vacuum panels, the efficient cooling system allows for efficient operation, optimum energy savings and, as a result, low operating costs.

Ethernet | Output temperature | 4-20mA | Remote Alarm | CO_2-Unit | 24V/ Max. 2,5A | COM N.C. N.O.
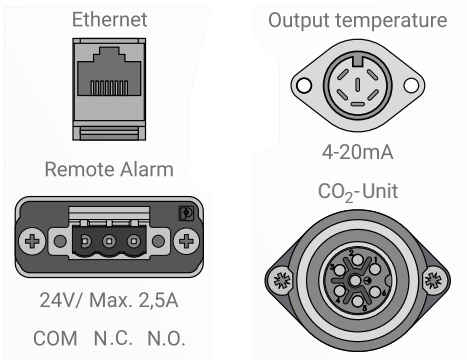
Interfaces.
For remote monitoring, all appliances are equipped with volt-free contacts and ethernet interfaces. The temperature and alarm records can also be read via the integrated USB interface. Optionally, a 4-20 mA output enables the integration of the temperature value into existing systems for data recording.
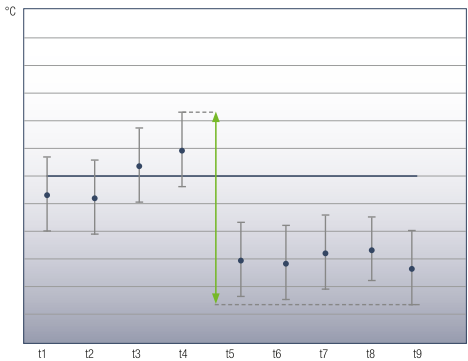
Minimal temperature fluctuations.
In order to maintain the quality of the stored samples, minimal temperature fluctuations are very important. The Liebherr ultra-low temperature freezers have the lowest possible fluctuations both internally within the appliance and over time.

Laboratory

Ultra-low temperature freezers	SUFsg 7001 MediLine	SUFsg 7001 version H72 MediLine	SUFsg 5001 MediLine	SUFsg 5001 version H72 MediLine
Total gross/net capacity	728/700 litre	728/700 litre	491/477 litre	491/477 litre
Exterior dimensions in mm (w/d/h)	1204/1082/1966	1204/1082/1966	920/1082/1966	920/1082/1966
Interior dimensions in mm (w/d/h)	890/605/1300	890/605/1300	606/605/1300	606/605/1300
Energy consumption in 365 days	2957 kWh	2957 kWh	2884 kWh	2884 kWh
Ambient temperature range	+16°C to +32°C	+16°C to +32°C	+16°C to +32°C	+16°C to +32°C
Heat output	1224 kJ/h	1224 kJ/h	1188 kJ/h	1188 kJ/h
Heat output system/Refrigeration system	air-cooled/2-stage cascade system	water-cooled/2-stage cascade system	air-cooled/2-stage cascade system	water-cooled/2-stage cascade system
Refrigeration circuits	2	2	2	2
Refrigerant	R 290/R 170	R 290/R 170	R 290/R 170	R 290/R 170
Sound power level [1]	47 dB(A)	47 dB(A)	47 dB(A)	47 dB(A)
Connection rating	7.0 A/1600 W	7.0 A/1600 W	7.0 A/1600 W	7.0 A/1600 W
Frequency/voltage	50 Hz/230V~	50 Hz/230V~	50 Hz/230V~	50 Hz/230V~
Temperature range	−40°C to −86°C	−40°C to −86°C	−40°C to −86°C	−40°C to −86°C
External cabinet finish	steel/white	steel/white	steel/white	steel/white
Door material	steel	steel	steel	steel
Internal liner material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Type of control/Temperature display	electronic controller/external digital	electronic controller/external digital	electronic controller/external digital	electronic controller/external digital
Interface/Volt-free alarm contact	LAN (Ethernet)/yes	LAN (Ethernet)/yes	LAN (Ethernet)/yes	LAN (Ethernet)/yes
Data logger	integrated, USB interface	integrated, USB interface	integrated, USB interface	integrated, USB interface
Power failure alarm	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs
Cooling system	static	static	static	static
Pull-down time +22°C to −80°C	450 min	450 min	360 min	360 min
Warm-up time −80°C to −60°C / to 0°C	250 min/2220 min	250 min/2220 min	230 min/2160 min	230 min/2160 min
Number/maximum number of storage shelves	4/13	4/13	4/13	4/13
Adjustable shelves	3	3	3	3
Shelf material	stainless steel	stainless steel	stainless steel	stainless steel
Shelf loading	50 kg	50 kg	50 kg	50 kg
Number of racks per shelf	6	6	4	4
Max. number of cryoboxes, 50 mm/75 mm	528/336	528/336	352/224	352/224
Castors	castors with brake at the front, fixed castors at the rear	castors with brake at the front, fixed castors at the rear	castors with brake at the front, fixed castors at the rear	castors with brake at the front, fixed castors at the rear
Replaceable door seal	yes	yes	yes	yes
Access ports	2 x Ø 28 mm	2 x Ø 28 mm	2 x Ø 28 mm	2 x Ø 28 mm
Lock	fitted	fitted	fitted	fitted
Door hinges	right hand hinged, not reversible	right hand hinged, not reversible	right hand hinged, not reversible	right hand hinged, not reversible
Gross/net weight	330/288 kg	330/288 kg	280/247 kg	280/247 kg
Accessories				
Racks for cryoboxes	see page 22	see page 22	see page 22	see page 22
Cryoboxes, set of 36	7790038	7790038	7790038	7790038
CO$_2$ backup system	7790048	7790048	7790048	7790048
Stainless steel storage shelves/foamed inner doors	7790050/7790127	7790050/7790127	7790049/7790070	7790049/7790070
Cover for mains switch incl. key lock	7790051	7790051	7790051	7790051
4−20mA analogue output	7790042	7790042	7790042	7790042

[1] Average sound pressure level at 1 m distance

Racks for cryoboxes

Convenient and temperature-resistant storage systems for well-organised sample storage. Available as aluminium or stainless steel side-access racks for 5x4 or 6x4 50 mm boxes and as stainless steel front-access drawer racks for 5x4 or 6x4 50 mm boxes.

Aluminium side-access rack 5x4	7790003	Stainless steel side-access rack 5x4	7790027
Aluminium side-access rack 6x4	7790014	Stainless steel side-access rack 6x4	7790028
Aluminium side-access rack 5x4 + cryoboxes	7790015	Stainless steel front-access rack 5x4 + drawers	7790031
Aluminium side-access rack 6x4 + cryoboxes	7790025	Stainless steel front-access rack 6x4 + drawers	7790032
Stainless steel side-access rack 5x4 + cryoboxes	7790029	Stainless steel front-access rack 5x4 + cryoboxes + drawers	7790033
Stainless steel side-access rack 6x4 + cryoboxes	7790030	Stainless steel front-access rack 6x4 + cryoboxes + drawers	7790036

Cryoboxes

For safe storage and transport of valuable samples with a fixed 9x9 grid for up to 81x2ml samples. The robust and temperature-resistant cardboard boxes are available in sets of 36.

CO_2 backup system

The CO_2 backup system ensures that the cooling of the stored samples continues at reduced temperatures for up to 72 hours in the event of a power failure. The CO_2 bottle is not part of the accessory.

Stainless steel storage shelves/foamed inner doors

Additional robust stainless steel shelves for flexible and individual partitioning of the interior at 24 mm increments. The foamed inner doors provide the best possible insulation and temperature stability, ensuring efficient cooling and low power consumption.

Cover for mains switch incl. key lock

Protection against unintended disconnection or manipulation of the mains switch.

4-20mA analogue output

The 4-20mA interface displays the interior temperature as a current value, which for example can be imported into an independent system for recording or checking the internal temperature.

Output temperature

4-20mA
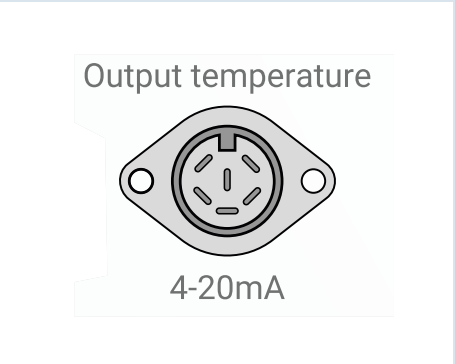
Laboratory

Refrigerators and freezers for laboratories and research: Perfection is our benchmark.

Whether for biotechnology, pharmaceutical research or healthcare – our professional refrigerators and freezers for use in laboratories or in research are used wherever stringent requirements for storage safety and temperature consistency apply. Integrated visual and audible alarm systems offer optimum safety by showing the operating condition and any discrepancies. The precision electronics enable temperature adjustment down to the nearest degree – and, in conjunction with the highly efficient insulation and cooling system, create optimum storage conditions. High-quality materials and perfectly coordinated components and functional parts ensure the maximum quality, durability and lasting efficiency of our appliances. We settle for nothing but the best when it comes to laboratories and research.

Laboratory

The advantages at a glance

The LKPv 1420, LKPv 1423 and LGPv 1420 body can be split and reassembled for difficult delivery situations. This needs to be undertaken by a trained engineer. Contact sales for more information.

The **refrigeration components** are securely integrated in the ceiling area, allowing ready access.

The integrated data logger includes a **min/max temperature memory function**.

These appliances have an access port (7.0 mm in diameter) in the ceiling area to enable connection of an **independent temperature sensor**.

In case of power failure, the electronic controller is immediately powered by an **integrated 12 V battery**. As a result, the **integrated memory continues to log** the internal temperatures without interruption for another 72 hours.

The **smooth interior** made of 304-grade stainless steel is easy to clean and enables **optimum hygiene**.

To increase the **net capacity** of the inner liner, functional parts like fans and evaporators are located **outside** the refrigerator compartment to save space.

The **practical door** remains open at 90° and is **self-closing** at less than 60° for convenient use.

The state-of-the-art **controller** has an integrated real time clock and can be **set to 1/10°C accuracy**.
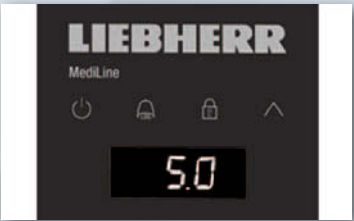
After a refrigerator or freezer door has been opened, a **vacuum** is built up by **air exchange** – with the effect that the door is hard to reopen immediately afterwards. The **integrated pressure relief valve** ensures that the vacuum is quickly equalised so that the door can easily be reopened.

The laboratory appliances are equipped with a volt-free contact for **alarm forwarding** to an external warning system.

Maximum temperature stability in the interior is ensured by the **dynamic cooling system** with two evaporator fans, in conjunction with optimal routing of the air flow.

If a **door is open** for longer than 1 minute, a visual and acoustic alarm is triggered. The temperature and power failure alarm indicates that the temperature is either exceeded or not met, and also warns in the event of power failures.

The **hot-gas defrost on demand with electronic control** avoids temperature spikes. To additionally improve temperature stability during defrost, the internal temperature is lowered slightly, shortly before the defrost starts.

The calibration function enhances validation and enables temperature control adapted to the specific application.

The LKPv and LGPv ranges **come with castors as standard** to allow versatile use depending on the available space and convenient cleaning also underneath the appliances.

LKPv 6520

Laboratory

Quality right down to the smallest detail

The MediLine range appliances are equipped with many features to guarantee the safety of stored products and temperature stability in the interior. High-quality materials and precise workmanship, extremely efficient refrigeration components as well as documentation and alarm functions ensure optimum storage of sensitive samples, chemicals and research materials.

Integrated digital controller.
The intuitive controller with integrated real-time clock allows the temperature to be set to 1/10°C accuracy. The large display allows improved temperature visibility at a glance. The keyboard is dirt resistant and easy to clean – to meet the most stringent hygiene requirements in the laboratory.

Integrated alarm systems.
A visual and audible door alarm alerts the user to temperature deviations. An alarm is also raised if the door is open for longer than one minute or in the event of power failure.
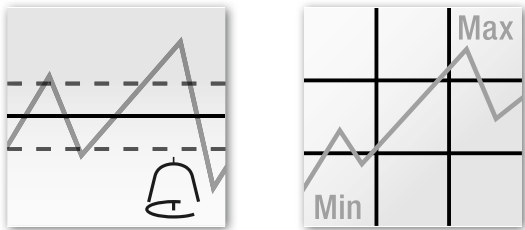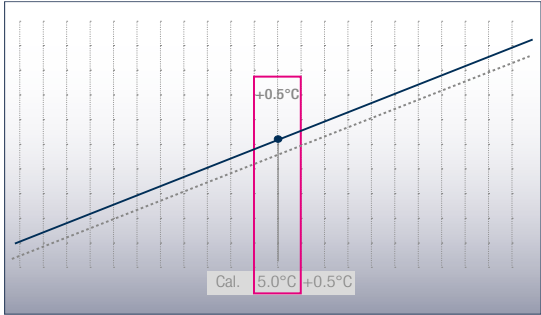
Integrated data memory.
The min/max temperature memory function stores the values for up to 41 days. In addition the alarm memory function records the last 3 alarm conditions with alarm type, date and time, duration and maximum temperature.

Accurate 1-point calibration.
The digital controller includes a calibration function for extremely accurate temperature control and display. This permits compensation between the set temperature and the actual internal temperature. Positive or negative changes to the correction value can be made in steps of 0.1 K.

72 hours

Mains-independent power supply of the electronic controller.
In case of power failure, the electronic controller is powered by a battery. The memory continues to log the internal temperature for another 72 hours.
If external alarm and monitoring systems have been connected, then data transfer to these is also maintained.

External temperature sensor.
The laboratory appliances have an access port (diameter 7.0 mm) in the appliance ceiling which allows a temperature sensor to be positioned in the interior.
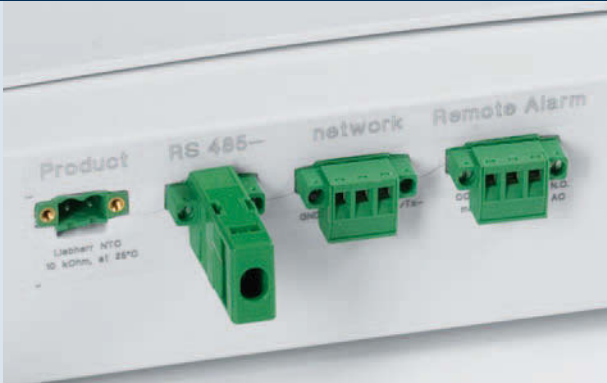
External temperature and alarm documentation.
The laboratory appliances are equipped with a volt-free contact for alarm forwarding to an external remote warning system. In addition the appliances have an RS 485 interface which enables as many as 20 appliances to be networked with a central monitoring and alarm system.
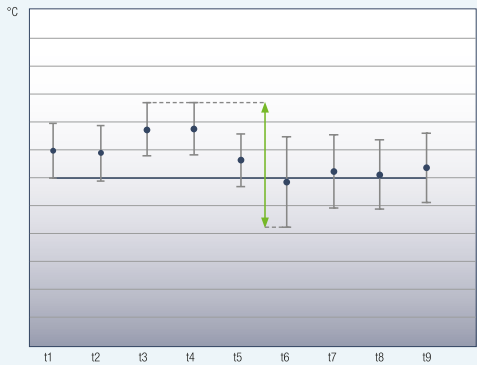
Maximum temperature consistency.
Maximum temperature stability in the interior is ensured by the dynamic cooling system with double ventilation. Very short defrost cycles allow the internal temperature to be kept almost constant during the defrost phases. All laboratory appliances are designed according to the EN 60068-3 standard with regard to maximum temperature stability and consistency.

Advantage of hot gas defrost
It is quick, with minimal temperature rise.

30 min Electric defrost

10 min Hot gas defrost

Energy-efficient hot-gas defrost system/ No temperature spikes.
Defrost less often and faster: the controller calculates the optimum defrost cycles based on the compressor run-time. Then the fridges defrost in just 8 minutes and the freezers in just 12 minutes. The internal temperature is slightly lowered shortly before so it remains almost constant during the defrost cycle.

Heavy-duty professional stable door.
Quick access, minimal cold loss, maintaining of product quality. Half-door appliances are ideal particularly with the frequent door opening which occurs in the pharmaceutical industry or the laboratory. Samples and compounds used more frequently are stored in the upper area for quick access while below there is plenty of space for materials and raw materials which are needed less frequently. Thanks to the stable doors with their self-closing mechanism, only a small amount of cold air escapes on opening and this helps to maintain temperature stability and therefore the quality of the goods stored over the long term.

Laboratory

Heavy-duty fridges	LKPv 1423 MediLine	LKPv 1420 MediLine LED	LKPv 8420 MediLine	LKPv 6523 MediLine	LKPv 6520 MediLine LED	LKPv 6527 MediLine
Gross capacity	1397 litre	1366 litre	855 litre	617 litre	602 litre	598 litre
Exterior dimensions in mm (w/d/h)	1430/830/2160	1430/830/2160	790/980/2160	700/830/2160	700/830/2160	700/830/2160
Interior dimensions in mm (w/d/h)	1236/650/1500	1236/650/1550	620/850/1550	533/650/1500	533/650/1550	533/650/1550
Energy consumption in 365 days [1]	820 kWh	714 kWh	603 kWh	571 kWh	497 kWh	688 kWh
Ambient temperature range	+10°C to +40°C	+10°C to +40°C	+10°C to +40°C	+10°C to +40°C	+10°C to +40°C	+10°C to +40°C
Refrigerant	R 290	R 290	R 290	R 290	R 290	R 290
Sound power level	58 dB(A)	58 dB(A)	58 dB(A)	58 dB(A)	58 dB(A)	58 dB(A)
Voltage/Connection rating	220–240V~/3.0 A	220–240V~/2.5 A	220–240V~/2.0 A	220–240V~/2.0 A	220–240V~/2.0 A	220–240V~/2.0 A
Cooling system	forced-air	forced-air	forced-air	forced-air	forced-air	forced-air
Defrost	automatic	automatic	automatic	automatic	automatic	automatic
Temperature range	0°C to +16°C	−2°C to +16°C	−2°C to +16°C	0°C to +16°C	−2°C to +16°C	−2°C to +16°C
Gradient [2]/max. fluctuation [3]	3.8°C/3.9°C	3.6°C/2.9°C	2.1°C/1.8°C	2.0°C/1.6°C	1.8°C/1.0°C	1.8°C/1.0°C
External cabinet finish	steel/white	steel/white	steel/white	steel/white	steel/white	steel/white
Door material	glass door	steel	steel	glass door	steel	steel
Internal liner material	304-grade stainless steel	304-grade stainless steel	304-grade stainless steel	304-grade stainless steel	304-grade stainless steel	304-grade stainless steel
Type of control	electronic controller	electronic controller	electronic controller	electronic controller	electronic controller	electronic controller
Temperature display	external digital	external digital	external digital	external digital	external digital	external digital
Power failure alarm	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs
Fault warning signal	visual and audible	visual and audible	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	RS 485/yes	RS 485/yes
Interior light	LED lighting, with separate switch			LED lighting, with separate switch		
Adjustable shelves	8	8	4	4	4	4
Usable shelf area in mm (w/d)	1236/640	1236/640	620/800	533/650	533/650	533/650
Shelf material	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated
Shelf loading	60 kg	60 kg	60 kg	60 kg	60 kg	60 kg
Castors	castors with brake at the front, castors at the rear	castors with brake at the front, castors at the rear	castors with brake at the front, fixed castors at the rear	castors with brake at the front, fixed castors at the rear	castors with brake at the front, fixed castors at the rear	castors with brake at the front, fixed castors at the rear
Handle	full-length integrated handle	full-length integrated handle	full-length integrated handle	full-length integrated handle	full-length integrated handle	full-length integrated handle
Lock	fitted	fitted	fitted	fitted	fitted	fitted
Self-closing door	yes	yes	yes	yes	yes	yes
Door hinges	left hand/right hand	left hand/right hand	right, reversible on site	right, reversible on site	right, reversible on site	right, reversible on site
Gross/net weight	266/221 kg	247/201 kg	175/145 kg	163/136 kg	152/126 kg	155/129 kg
Accessories						
Shelf, plastic-coated	7112393	7112393	7113643	7112393	7112393	7112393
U-shaped trayslide, right	9001761	9001761	9005089	9001761	9001761	9001761
U-shaped trayslide, left	9001757	9001757	9005077	9001757	9001757	9001757
Foot pedal opener	9590639	9590639	9590659	9590659	9590659	9590659
RS 485/RS 232 adapter, data log software	9590387	9590387	9590387	9590387	9590387	9590387
NTC product temperature sensor	9590407	9590407	9590407	9590407	9590407	9590407
Side-by-Side set	9901947	9901947	9901947	9901947	9901947	

[1] Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers

[2] Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
[3] Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

Heavy-duty freezers	LGPv 1420 MediLine	LGPv 8420 MediLine	LGPv 6520 MediLine	LGPv 6527 MediLine
	No Frost	No Frost	No Frost	No Frost
Gross capacity	1366 litre	855 litre	602 litre	598 litre
Exterior dimensions in mm (w/d/h)	1430/830/2160	790/980/2160	700/830/2160	700/830/2160
Interior dimensions in mm (w/d/h)	1236/650/1550	620/850/1550	533/650/1550	533/650/1550
Energy consumption in 365 days [1]	2654 kWh	1739 kWh	1367 kWh	2019 kWh
Ambient temperature range	+10°C to +40°C	+10°C to +40°C	+10°C to +40°C	+10°C to +40°C
Refrigerant	R 290	R 290	R 290	R 290
Sound power level	60 dB(A)	60 dB(A)	60 dB(A)	60 dB(A)
Voltage/Connection rating	220–240V~/4.5 A	220–240V~/4.0 A	220–240V~/4.0 A	220–240V~/4.0 A
Cooling system	forced-air	forced-air	forced-air	forced-air
Defrost	automatic	automatic	automatic	automatic
Temperature range	−9°C to −26°C	−9°C to −35°C [2]	−9°C to −35°C [2]	−9°C to −35°C [2]
Gradient [3]/max. fluctuation [4]	4.3°C/6.7°C	4.5°C/5.7°C	2.9°C/3.6°C	2.9°C/3.6°C
External cabinet finish	steel/white	steel/white	steel/white	steel/white
Door material	steel	steel	steel	steel
Internal liner material	304-grade stainless steel	304-grade stainless steel	304-grade stainless steel	304-grade stainless steel
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 72 hrs	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs
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
Adjustable shelves	8	4	4	4
Usable shelf area in mm (w/d)	1236/640	620/800	533/650	533/650
Shelf material	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated
Shelf loading	60 kg	60 kg	60 kg	60 kg
Castors	castors with brake at the front, castors at the rear	castors with brake at the front, fixed castors at the rear	castors with brake at the front, fixed castors at the rear	castors with brake at the front, fixed castors at the rear
Handle	full-length integrated handle	full-length integrated handle	full-length integrated handle	full-length integrated handle
Lock	fitted	fitted	fitted	fitted
Self-closing door	yes	yes	yes	yes
Door hinges	left hand/right hand	right, reversible on site	right, reversible on site	right, reversible on site
Gross/net weight	253/207 kg	183/151 kg	158/133 kg	162/136 kg
Accessories				
Shelf, plastic-coated	7112393	7113643	7112393	7112393
U-shaped trayslide, right	9001761	9005089	9001761	9001761
U-shaped trayslide, left	9001757	9005077	9001757	9001757
Foot pedal opener	9590639	9590659	9590659	9590659
RS 485/RS 232 adapter, data log software	9590387	9590387	9590387	9590387
NTC product temperature sensor	9590407	9590407	9590407	9590407
Side-by-Side set	9901947	9901947	9901947	

Laboratory

1 Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers
2 The temperature range is valid at a maximum ambient temperature of +30°C

3 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
4 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

The advantages at a glance

The **integrated lock** is exceedingly sturdy and protects the stored products against unauthorised access.

Volt-free contact for forwarding alarms to an **external remote warning system**.

The **precise electronic controller** with digital temperature display allows accurate temperature setting to 1/10°C. An **integrated data memory** logs the last three temperature alarms and power failures, together with the time, date and duration of the alarm. The respective data can be recalled using the AlarmLog function and read on the display panel.

The **commercial-grade moulded polystyrol inner liner** is exceptionally easy to clean and enables **optimum hygiene**.

Laboratory fridges LKv 3913 and LKUv 1613 with a **glass door** feature and **efficient LED interior light** with a separate switch.

The sturdy, **plastic-coated grid shelves** have a **loading capacity of up to 45 kg**, are easily adjustable in height and can be removed at a door opening angle of 90°.

1-point calibration for accurate temperature control. This permits compensation between the set temperature and the actual internal temperature.

Access port for integration of the optionally available **NTC temperature sensor** or **independent temperature sensor PT 100** or similar measuring instruments.

Self-closing doors prevent cold loss and contribute to the **temperature stability** of the appliances. The integrated lock is very sturdy and protects the samples and products against unauthorised access.

The **dynamic cooling system** in conjunction with the **precise electronic controller** ensures maximum temperature stability and high temperature consistency in the interior.

In laboratory fridge-freezer LCv 4010, the **drawers** can be removed easily using the **recessed grips** integrated on the sides. The drawers have a transparent front to provide a clear view of the goods.

No more defrosting thanks to **NoFrost technology** (only for LGv appliances). Recirculated air cooling binds humidity to the evaporator, while short cyclical defrosting phases ensure that it is conducted out of the interior. And the advantage of this? Unlike with manual defrosting, the tedious task of moving sensitive cooled goods around is no longer necessary – for convenient, safe and ice-free storage.

No Frost

LKv 3913
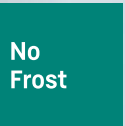
Laboratory

Quality right down to the smallest detail

Liebherr MediLine laboratory fridges the ideal solution for a small footprint or for under-worktop integration. The range comprises two freestanding and under-worktop fridges with a glass door or a solid door. The precise electronic controller enables temperatures to be set accurately. The dynamic cooling system ensures high temperature consistency. Integrated alarm systems guarantee safe storage.
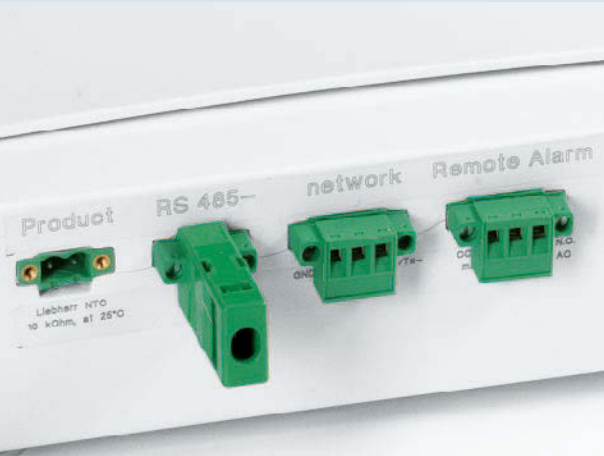
External temperature and alarm documentation.
The laboratory appliances are equipped with a volt-free contact for alarm forwarding to an external remote warning system, as well as with a serial interface RS 485 which enables central documentation of temperature profiles and alarm events. LTM documentation software is optionally available.
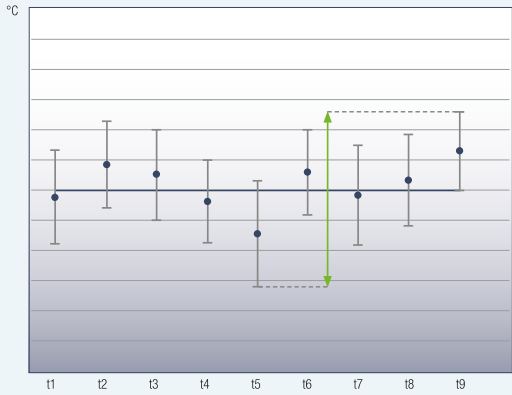
Maximum temperature consistency.
The dynamic cooling system in conjunction with the precise electronic controller ensures maximum temperature stability. All laboratory appliances are designed according to the EN 60068-3 standard with regard to optimum temperature consistency.
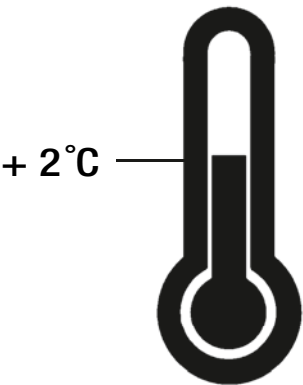
Safety thermostat.
The appliances with electronic controllers are equipped with an additional safety thermostat to prevent temperatures dropping below +2°C and to protect sensitive products in the event of a fault.

External temperature sensor.
The laboratory appliances have an access port (diameter 10 mm) on the rear which allows the temperature sensor to be positioned in the interior.

Laboratory

Laboratory fridges with electronic controls	LKv 5710 MediLine	LKv 3913 MediLine	LKv 3910 MediLine
Total gross / net capacity	583 / 540 litre	386 / 332 litre	361 / 333 litre
Exterior dimensions in mm (w/d/h)	751 / 750 / 1844	601 / 618 / 1840	601 / 618 / 1840
Interior dimensions in mm (w/d/h)	634 / 538 / 1500	440 / 435 / 1635	440 / 435 / 1635
Energy consumption in 365 days [1]	438 kWh	480 kWh	309 kWh
Ambient temperature range	+10 °C to +35 °C	+10 °C to +35 °C	+10 °C to +35 °C
Refrigerant	R 600a	R 600a	R 600a
Sound power level	52 dB(A)	48 dB(A)	48 dB(A)
Voltage / Connection rating	220 – 240V~ / 1.5 A	220 – 240V~ / 1.5 A	220 – 240V~ / 1.5 A
Cooling system	forced-air	forced-air	forced-air
Defrost	automatic	automatic	automatic
Temperature range	+3 °C to +16 °C	+3 °C to +16 °C	+3 °C to +16 °C
Gradient [2] / max. fluctuation [3]	3.8 °C / 3.1 °C	5.6 °C / 4.7 °C	4.1 °C / 3.6 °C
External cabinet finish	steel / white	steel / white	steel / white
Door material	steel	glass door	steel
Internal liner material	commercial grade moulded polystyrol	commercial grade moulded polystyrol	commercial grade moulded polystyrol
Type of control	electronic controller	electronic controller	electronic controller
Temperature display	external digital	external digital	external digital
Power failure alarm	when mains power return	when mains power return	when mains power return
Fault warning signal	visual and audible	visual and audible	visual and audible
Interface / Volt-free alarm contact	RS 485 / yes	RS 485 / yes	RS 485 / yes
Interior light		LED lighting, with separate switch	
Adjustable shelves	5	5	5
Usable shelf area in mm (w / d)	634 / 518	440 / 420	440 / 420
Shelf material	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated
Shelf loading	60 kg	45 kg	45 kg
Castors	castors with brake at the front, fixed castors at the rear		
Handle	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism
Lock	fitted	fitted	fitted
Self-closing door	yes	yes	yes
Door hinges	right, reversible on site	right, reversible on site	right, reversible on site
Gross / net weight	100 / 91 kg	88 / 82 kg	70 / 65 kg
Accessories			
Shelf, plastic-coated	7113485	7113333	7113333
Evaporator cover, white		9590241	9590241
Adjustable legs			9590231
RS 485 / RS 232 adapter, data log software	9590387	9590387	9590387
Additional lock barrels (up to 10)		on request	on request
Foot pedal opener	9094502		
Roller bars		9590380	9590380

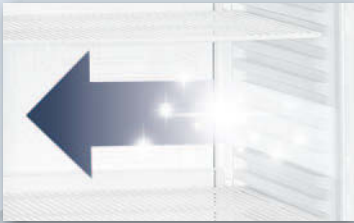**1** Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers

2 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.

3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

Laboratory fridges and freezers with electronic controls

Laboratory fridges and **freezers** with electronic controls	LKUv 1613 MediLine (LED)	LKUv 1610 MediLine	LGv 5010 MediLine (No Frost)
Total gross/net capacity	152/132 litre	142/133 litre	478/337 litre
Exterior dimensions in mm (w/d/h)	601/618/820	601/618/820	751/750/1844
Interior dimensions in mm (w/d/h)	440/435/670	440/435/670	602/520/1224
Energy consumption in 365 days [1]	369 kWh	273 kWh	1245 kWh
Ambient temperature range	+10°C to +35°C	+10°C to +35°C	+16°C to +35°C
Refrigerant	R 600a	R 600a	R 290
Sound power level	47 dB(A)	47 dB(A)	55 dB(A)
Voltage/Connection rating	220–240V~/1.0 A	220–240V~/1.0 A	220–240V~/3.0 A
Cooling system/Defrost	forced-air/automatic	forced-air/automatic	forced-air/automatic
Temperature range	+3°C to +16°C	+3°C to +16°C	−9°C to −35°C
Gradient [2]/max. fluctuation [3]	5.1°C/4.9°C	4.3°C/4.6°C	5.8°C/4.9°C
External cabinet finish	steel/white	steel/white	steel/white
Door material	glass door	steel	steel
Internal liner material	commercial grade moulded polystyrol	commercial grade moulded polystyrol	commercial grade moulded polystyrol
Type of control/Temperature display	electronic controller/external digital	electronic controller/external digital	electronic controller/external digital
Power failure alarm	when mains power return	when mains power return	when mains power return
Fault warning signal	visual and audible	visual and audible	visual and audible
Interface/Volt-free alarm contact	RS 485/yes	RS 485/yes	RS 485/yes
Interior light	LED lighting, with separate switch		
Adjustable shelves	3	3	
Usable shelf area in mm (w/d)	440/420	440/420	602/485
Shelf material	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated
Shelf loading	45 kg	45 kg	60 kg
Castors			castors with brake at the front, fixed castors at the rear
Drawers/Number of baskets			8/2
Handle	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism
Lock	fitted	fitted	fitted
Self-closing door	yes	yes	yes
Door hinges	right, reversible on site	right, reversible on site	right, reversible on site
Gross/net weight	45/43 kg	39/37 kg	124/114 kg
Accessories			
Chrome wire shelf			7112059
Shelf, plastic-coated	7113333	7113333	
Stacking kit, white	9592697	9592697	
Roller bars	9590521	9590521	
Evaporator cover, white	9590523	9590523	
NTC product temperature sensor			9591493
RS 485/RS 232 adapter, data log software	9590387	9590387	9590387
Foot pedal opener			9094502
Additional lock barrels (up to 10)	on request	on request	

1 Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers

Laboratory fridge-freezer combination with electronic controls

Laboratory fridge-freezer combination with electronic controls		LCv 4010 MediLine (Smart Frost)
Total gross/net capacity	fridge compartment	254/240 litre
Total gross/net capacity	freezer compartment	107/105 litre
Exterior dimensions in mm (w/d/h)		601/618/2003
Interior dimensions in mm (w/d/h)	fridge compartment	440/441/1105
Interior dimensions in mm (w/d/h)	freezer compartment	433/433/597
Energy consumption in 365 days [1]		657 kWh
Ambient temperature range		+10°C to +35°C
Refrigerant		R 600a
Sound power level		52 dB(A)
Voltage/Connection rating		220–240V~/1.5 A
Cooling system	fridge/freezer comp.	forced-air/static
Defrost	fridge/freezer comp.	automatic/manual
Temperature range	fridge/freezer comp.	+3°C to +16°C / −9°C to −30°C
Gradient [2]	fridge/freezer comp.	5.2°C/7.9°C
Max. fluctuation [3]	fridge/freezer comp.	5.7°C/5.5°C
External cabinet finish		steel/white
Door material		steel
Internal liner material		commercial grade moulded polystyrol
Type of control		electronic controller
Temperature display		external digital
Power failure alarm		when mains power return
Fault warning signal		visual and audible
Interface/Volt-free alarm contact		RS 485/yes
Adjustable shelves	fridge compartment	4
Usable shelf area in mm (w/d)	fridge compartment	440/409
Shelf material	fridge/freezer comp.	wire shelves plastic-coated/glass
Shelf loading	fridge/freezer comp.	45 kg/24 kg
Drawers	freezer compartment	3
Handle		slimline handle with integrated opening mechanism
Lock		fitted
Self-closing door		yes
Door hinges		right, reversible on site
Gross/net weight		90/84 kg
Accessories		
Shelf, plastic-coated, for	fridge compartment	7113333
Evaporator cover, white, for	fridge compartment	9590391
NTC product temperature sensor		9590407
RS 485/RS 232 adapter, data log software		9590387
Roller bars		9592756
Additional lock barrels (up to 10)		on request

Laboratory

2 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

The advantages at a glance

The laboratory appliances are equipped with a volt-free contact for **alarm forwarding** to an external remote warning system.

Access port for integration of an **independent temperature sensor** (e.g. an optionally available NTC temperature sensor or similar measuring instruments) in laboratory appliances.

The **commercial-grade moulded polystyrol inner liner** is exceptionally easy to clean and enables **optimum hygiene.**
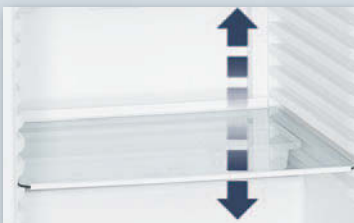
The **glass shelves** of the laboratory fridges with spark-free interior are **height adjustable** and can easily be removed at a door opening angle of 90 °.

The **drawers** in the LCexv laboratory fridge-freezer can easily be removed by the handles recessed in the sides. The drawers have a transparent front providing a **clear view of the products stored inside.**

The **electronic controller** with digital temperature display allows **accurate temperature setting to 1/10°C.** The large display allows improved temperature visibility at a glance.

All laboratory fridges and freezers with **spark-free interior** are tested according to the 2014/34/EU (ATEX) Directive.

The **precise electronic controller** has an **integrated data memory.** It logs e.g. the maximum and minimum internal temperatures.

Laboratory appliances with a **electronic controller** provide **1-point calibration** for accurate temperature control. This permits compensation between the set temperature and the actual internal temperature.

The **self-closing door** prevents unnecessary cold loss and contributes to the temperature stability of the appliances. The **integrated lock** is very sturdy and protects the samples and products against unauthorised access.

Door seals can be **replaced.**

Laboratory

LCexv 4010

Quality right down to the smallest detail

Liebherr provides fridges and freezers with spark-free interior especially for storing explosive and highly flammable substances in labs and in the chemical industry. The inner liners meet the safety requirements of the EU Directive 2014/34/EU (ATEX) and have been tested according to the EN 1127-1, IEC 60079-0 and IEC 60079-15 standards by elecosuisse –

SEV (Swiss Association for Electrical Engineering, Power and Information Technologies), an approved ATEX conformity evaluation organisation.

Certified according to ATEX.
All appliances with spark-free interior are tested according to the 2014/34/EU (ATEX) Directive. Rated as II 3G Ex nA II T6, these appliances are suitable for storing explosive and highly flammable substances in sealed containers.

The electronic controller.
The precise electronic controller with digital temperature display enables temperatures to be set accurately to 1/10°C. Symbols indicate the operating status of the appliance. The electronic controller is flush-mounted and equipped with a membrane keyboard for perfect hygiene.
The large display allows improved temperature visibility at a glance.

Accurate 1-point calibration.
The laboratory appliances with electronic controls have a 1-point calibration function for accurate temperature control. This permits compensation between the set temperature and the actual internal temperature. Positive or negative changes to the correction value can be made in steps of 0.1 K.
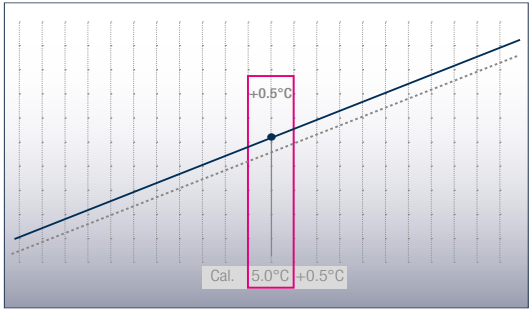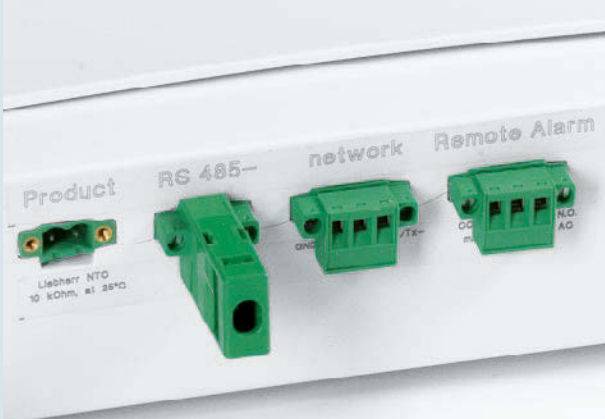
External temperature and alarm documentation.
The laboratory appliances are equipped with a volt-free contact for alarm forwarding to an external remote warning system, as well as with a serial interface RS 485 which enables central documentation of temperature profiles and alarm events. LTM monitoring software is optionally available.
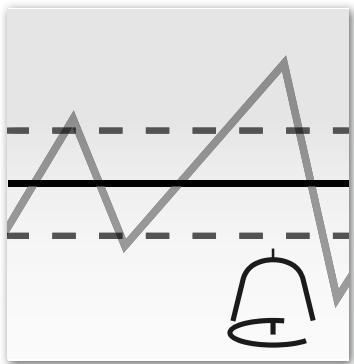
Integrated alarm systems.
Visual and audible alarm systems alert the user to undesired temperature deviations or when the door is open. All alarm parameters can be individually set. For example, the door-open alarm delay can be adjusted between 1 and 5 minutes. Furthermore, the laboratory appliances with electronic controls have a visual power failure alarm and a sensor defect alarm.

Integrated data memory.
The electronic controller is equipped with 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.
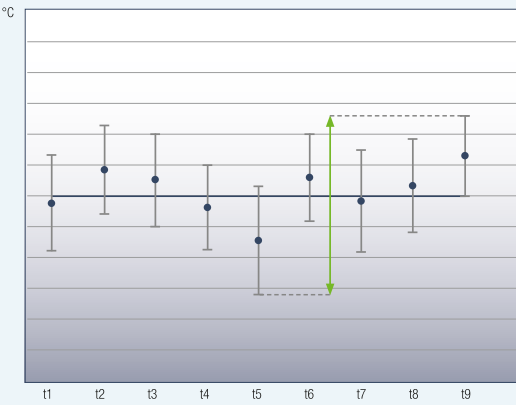
Maximum temperature consistency.
Maximum temperature stability is ensured by the cooling systems of the laboratory fridges and freezers in conjunction with the electronic controller. The fridges are equipped with a safety thermostat to prevent temperatures below +2°C in case of a fault. All laboratory appliances with electronic controls are designed according to the EN 60068-3 standard with regard to maximum temperature stability and consistency.

Sturdy glass shelves.
The sturdy glass shelves are easily adjustable in height and can conveniently be removed at a door opening angle of 90°. They ensure secure positioning of the refrigerated or frozen products and have a loading capacity of up to 40 kg in the refrigerator compartment and up to 24 kg in the freezer compartment.

External temperature sensor.
The laboratory appliances with electronic controls have an access port (diameter 10 mm) on the rear which allows the temperature sensor to be positioned in the interior.

Laboratory

Laboratory fridge-freezer combination
with electronic controls and spark-free interior

	LCexv 4010 MediLine (Smart Frost)
Total gross/net capacity — fridge compartment	254/240 litre
Total gross/net capacity — freezer compartment	107/105 litre
Exterior dimensions in mm (w/d/h)	601/618/2003
Interior dimensions in mm (w/d/h) — fridge compartment	440/441/1105
Interior dimensions in mm (w/d/h) — freezer compartment	433/433/597
Energy consumption in 365 days [1]	657 kWh
Ambient temperature range	+10°C to +35°C
Refrigerant	R 600a
Sound power level	52 dB(A)
Voltage/Connection rating	220–240V~/1.5 A
Cooling system — fridge/freezer comp.	forced-air/static
Defrost — fridge/freezer comp.	automatic/manual
Temperature range — fridge/freezer comp.	+3°C to +16°C / −9°C to −30°C
Gradient [2] — fridge/freezer comp.	4.0°C/7.9°C
Max. fluctuation [3] — fridge/freezer comp.	3.9°C/5.5°C
External cabinet finish	steel/white
Door material	steel
Internal liner material	commercial grade moulded polystyrol
Type of control/Temperature display	electronic controller/external digital
Power failure alarm	when mains power return
Fault warning signal	visual and audible
Interface/Volt-free alarm contact	RS 485/yes
Adjustable shelves — fridge compartment	4
Usable shelf area in mm (w/d) — fridge compartment	440/409
Shelf material — fridge/freezer comp.	glass/glass
Shelf loading — fridge/freezer comp.	40 kg/24 kg
Drawers — freezer compartment	3
Handle	slimline handle with integrated opening mechanism
Lock	fitted
Self-closing door	yes
Door hinges	right, reversible on site
Gross/net weight	92/87 kg
Accessories	
Glass shelf	9293629
NTC product temperature sensor	9590145
RS 485/RS 232 adapter, data log software	9590387
Roller bars	9592756
Evaporator cover, white	9590391
Additional lock barrels (up to 10)	on request

Laboratory fridges and freezers
with electronic controls and spark-free interior

	LKexv 3910 MediLine	LKUexv 1610 MediLine	LGex 3410 MediLine	LGUex 1500 MediLine
Total gross/net capacity	360/344 litre	141/130 litre	310/284 litre	139/129 litre
Exterior dimensions in mm (w/d/h)	601/618/1840	601/618/820	601/618/1840	601/618/820
Interior dimensions in mm (w/d/h)	440/435/1635	440/435/670	420/400/1587	454/450/663
Energy consumption in 365 days [1]	316 kWh	315 kWh	478 kWh	338 kWh
Ambient temperature range	+10°C to +35°C	+10°C to +35°C	+10°C to +35°C	+10°C to +35°C
Refrigerant	R 600a	R 600a	R 600a	R 600a
Sound power level	48 dB(A)	47 dB(A)	45 dB(A)	45 dB(A)
Voltage/Connection rating	220–240V~/1.5 A	220–240V~/1.0 A	220–240V~/1.5 A	220–240V~/1.0 A
Cooling system/Defrost	forced-air/automatic	forced-air/automatic	static/manual	static/manual
Temperature range	+3°C to +16°C	+3°C to +16°C	−9°C to −30°C	−9°C to −26°C
Gradient [2]/max. fluctuation [3]	5.5°C/5.1°C	3.9°C/4.8°C	6.9°C/4.2°C	6.6°C/3.3°C
External cabinet finish	steel/white	steel/white	steel/white	steel/white
Door material	steel	steel	steel	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	when mains power return	when mains power return	when mains power return	when mains power return
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
Adjustable shelves	5	3		
Usable shelf area in mm (w/d)	440/420	440/420	420/400	454/450
Shelf material	glass	glass	evaporator plates	evaporator plates
Shelf loading	40 kg	40 kg	24 kg	24 kg
Drawers			8	3
Number of baskets				1
Compartment height in mm			185	149
Handle	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism
Lock	fitted	fitted	fitted	fitted
Self-closing door/Door hinges	yes/right, reversible on site	yes/right, reversible on site	yes/right, reversible on site	yes/right, reversible on site
Gross/net weight	74/68 kg	41/38 kg	91/86 kg	45/42 kg
Accessories				
Glass shelf	9293629	9293629		
Stacking kit, white		9592697		9592697
Roller bars	9590380	9590521	9592756	9590521
Evaporator cover, white	9590241	9590523		
Adjustable legs	9590231		9590231	9590231
NTC product temperature sensor			9590145	9590145
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

1 Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers

2 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

Laboratory

The advantages at a glance

Quality right down to the smallest detail

Convenient **opening of the door** requiring little force: The ergonomically designed **lever handle** enables smooth opening of the door with less shaking of the appliance.

The **moulded polystyrol inner liner** with large corner radii is exceptionally easy to clean and enables **optimum hygiene.**

The **sturdy glass shelves** are easily adjustable in height and can conveniently be removed at a door opening angle of 90°. They ensure secure storage and have a **loading capacity of up to 40 kg.**

The **integrated lock** is exceedingly sturdy and protects the stored products against unauthorised access.

Sealed defrost water drain in the laboratory appliances with spark-free interior for compliance with the ATEX Directive 2014/34/EU.

Reversible door hinges in the LKexv models enable individual adaption to space conditions. The door seals can also be easily replaced as required.

Certified according to ATEX.
The LKexv models are labelled clearly and permanently on the outer housing in accordance with the ATEX Directive 2014/34/EU, including information for cleaning. Rated as II 3G Ex nA II T6, these appliances are suitable for storing explosive and highly flammable substances in sealed containers.

Hygienic interior for versatile use.
The commercial-grade moulded polystyrol inner liner is exceptionally easy to clean and enables optimum hygiene. The moulded trayslides prevent the glass shelves from tipping and allow them to be varied in height.

Glass shelves.
The glass shelves ensure secure storage even for small items and have a loading capacity of up to 40 kg.

Water tray.
The defrost water drain in the laboratory appliances with spark-free interior is sealed for compliance with the ATEX Directive 2014/34/EU. The defrost water obtained during the automatic defrost cycle is collected in a tray which has to be emptied manually at regular intervals.

Laboratory

LKexv 5400

Laboratory

Laboratory fridges with mechanical control and spark-free interior	LKexv 5400 MediLine	LKexv 3600 MediLine	LKexv 2600 MediLine	LKexv 1800 MediLine
Total gross/net capacity	554/520 litre	333/307 litre	240/221 litre	180/160 litre
Exterior dimensions in mm (w/d/h)	750/729/1640	600/610/1641	600/610/1250	600/600/860
Interior dimensions in mm (w/d/h)	600/560/1452	470/440/1452	470/440/1062	513/441/702
Energy consumption in 365 days [1]	359 kWh	346 kWh	287 kWh	328 kWh
Ambient temperature range	+10 °C to +40 °C	+10 °C to +43 °C	+10 °C to +40 °C	+10 °C to +30 °C
Refrigerant	R 600a	R 600a	R 600a	R 600a
Sound power level	48 dB(A)	48 dB(A)	48 dB(A)	47 dB(A)
Voltage/Connection rating	220–240V~/1.5 A	220–240V~/1.5 A	220–240V~/1.0 A	220–240V~/1.0 A
Cooling system	forced-air	forced-air	forced-air	forced-air
Defrost	automatic	automatic	automatic	automatic
Temperature range	+1 °C to +15 °C	+1 °C to +15 °C	+1 °C to +15 °C	+1 °C to +15 °C
Gradient [2]/max. fluctuation [3]	6.9 °C/5.8 °C	4.8 °C/3.0 °C	6.4 °C/5.5 °C	10.2 °C/7.4 °C
External cabinet finish	steel/white	steel/white	steel/white	steel/white
Door material	steel	steel	steel	steel
Internal liner material	commercial grade moulded polystyrol	commercial grade moulded polystyrol	commercial grade moulded polystyrol	commercial grade moulded polystyrol
Type of control	analogue control	analogue control	analogue control	analogue control
Temperature display	external digital	external digital	external digital	external digital
Adjustable shelves	5	5	4	3
Usable shelf area in mm (w/d)	600/550	470/425	470/425	513/412
Shelf material	glass	glass	glass	glass
Shelf loading	40 kg	40 kg	40 kg	40 kg
Handle	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism	ergonomic slimline handle
Lock	fitted	fitted	fitted	fitted
Door hinges	right, reversible on site	right, reversible on site	right, reversible on site	right, reversible on site
Gross/net weight	84/77 kg	64/59 kg	53/49 kg	41/38 kg
Accessories				
Glass shelf	9293613	9293615	9293615	9293631
Castor base	9086365	9086323	9086323	
Adjustable legs	9590229	9590231	9590231	
Additional lock barrels (up to 10)	on request	on request	on request	

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

2 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

The advantages at a glance

Visual and audible temperature alarms alert the user if **temperature deviation limits** are exceeded. The parameters for the temperature alarm can be individually set. The integrated data memory with min/max temperatures logs temperature fluctuations with date, time and duration of the alarm. In addition the electronic controller ensures high temperature consistency in the interior. All laboratory chest freezers are designed in accordance with EN 60068-3.

Volt-free contact for forwarding alarms to an **external remote warning system.**

Precise electronic controller with digital temperature display for accurate temperature setting. Thanks to its position on the **chest rear**, the electronic controller can be connected to external systems.
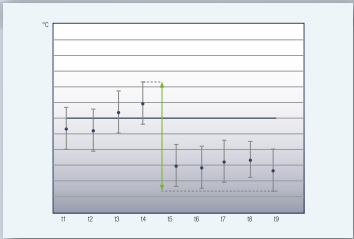
The electronic controller ensures **maximum temperature stability** and **high temperature consistency** in the interior.

Stop Frost

The **StopFrost system** fitted to the LGT models reduces frosting of the interior and the freezer contents – so the time-consuming process of defrosting is necessary far less often. The **vacuum** is also equalised quickly after the lid is opened and closed so that the chest can be re-opened effortlessly.

Sturdy, one-piece and easy-to-clean **lid.** The **strong** lid hinges are designed for at least 50,000 openings.

The **aluminium handle** on the LGT models is simple and tough for intensive commercial use. All appliances have **locks** as standard.

The lid has an integrated, **energy-efficient LED interior light** to **improve visibility** in the interior.

Access port (diameter 10 mm) for integration of the optionally available **NTC temperature sensor** or independent temperature sensor PT 100 or similar measuring instruments.
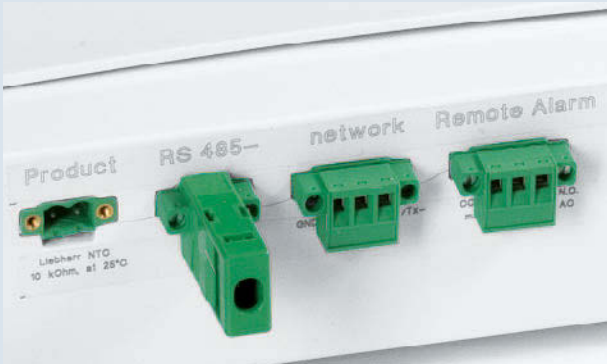
Laboratory chest freezers are equipped with **1-point calibration** for accurate temperature control.

Laboratory

LGT 2325

Quality right down to the smallest detail

The Liebherr laboratory chest freezers down to -45°C are available in three different sizes and are specially designed for the requirements in the research, laboratory, healthcare and industrial sector. The 1-point calibration ensures high temperature consistency. Integrated alarm systems and external temperature and alarm monitoring contribute to the safe storage of samples, chemicals and research materials.

External temperature and alarm documentation.
The laboratory chest freezers 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 for central documentation of the temperature profiles and alarm events.

The electronic controller.
The precise electronic controller with digital temperature display enables temperatures to be set accurately. Symbols indicate the operating status of the appliance. To ensure the level of hygiene required in the laboratory, the electronic controller is flush-mounted and equipped with a membrane keyboard.

Accurate 1-point calibration.
The laboratory chest freezers are equipped with 1-point calibration for accurate temperature control. This permits compensation between the set temperature and the actual internal temperature. Positive or negative changes to the correction value can be made in steps of 0.1 K.

Stop Frost

StopFrost System.
The StopFrost system fitted to the LGT models offers several key advantages: frosting of the freezer compartment and its contents is reduced and the time-consuming process of defrosting is necessary far less often. The vacuum is also equalised after the chest lid is opened and closed so that the laboratory chest can be re-opened effortlessly.

Laboratory

Integrated alarm systems.
Visual and audible alarm systems alert the user to undesired temperature deviations or when the door is open. All alarm parameters can be individually set. For example, the lid-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 electronic controller is equipped with 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 laboratory chest freezers have an access port (diameter 10 mm) on the rear which allows temperature sensor to be positioned in the interior.

Maximum temperature consistency.
The dynamic cooling system in conjunction with the electronic controller ensures maximum temperature stability. All laboratory chest freezers are designed according to the EN 60068-3 standard with regard to optimum temperature consistency.

Laboratory chest freezers down to -45°C	LGT 4725 MediLine	Smart Frost / LED	LGT 3725 MediLine	Smart Frost / LED	LGT 2325 MediLine	Smart Frost / LED
Total gross/net capacity	441/418 litre		350/332 litre		215/201 litre	
Exterior dimensions in mm (w/d/h)	1654/787/905		1379/787/905		1139/738/905	
Interior dimensions in mm (w/d/h)	1445/500/650		1170/500/650		889/410/630	
Energy consumption in 365 days [1]	1589 kWh		1069 kWh		824 kWh	
Ambient temperature range	+10°C to +30°C		+10°C to +30°C		+10°C to +30°C	
Refrigerant	R 290		R 290		R 290	
Sound power level	55 dB(A)		55 dB(A)		55 dB(A)	
Voltage/Connection rating	220–240V~/3.5 A		220–240V~/3.0 A		220–240V~/2.0 A	
Cooling system	static		static		static	
Defrost	manual		manual		manual	
Temperature range	−10°C to −45°C		−10°C to −45°C		−10°C to −45°C	
Gradient [2]/max. fluctuation [3]	3.5°C/1.8°C		4.3°C/2.2°C		4.7°C/1.9°C	
External cabinet finish	steel/white		steel/white		steel/white	
Lid material	steel		steel		steel	
Internal liner material	white coated aluminium		white coated aluminium		white coated aluminium	
Type of control	electronic controller		electronic controller		electronic controller	
Temperature display	external digital		external digital		external digital	
Power failure alarm	when mains power return		when mains power return		when mains power return	
Interface/Volt-free alarm contact	RS 485/yes		RS 485/yes		RS 485/yes	
Insulation	100 mm		100 mm		120 mm	
Number of baskets	0		0		0	
Number of baskets, max	16		13		10	
Interior light	LED		LED		LED	
Handle	profiled aluminium		profiled aluminium		profiled aluminium	
Lock	fitted		fitted		fitted	
Gross/net weight	92/76 kg		82/68 kg		69/58 kg	
Accessories						
NTC product temperature sensor	9590407		9590407		9590407	
RS 485/RS 232 adapter, data log software	9590387		9590387		9590387	
Basket large 479×208×190 mm	7113627		7113627			
Basket small 385×202×195 mm					7112317	

Laboratory

Heavy-duty laboratory fridges and freezers

Side-by-side set

The side-by-side set is easy to fit and enables the convenient use of two or more appliances next to one another and also allows their arrangement in a visually appealing manner. Furthermore, the side-by-side set prevents condensation and ice formation between two appliances which, without the side-by-side set, would otherwise be positioned next to one another.

U-shaped trayslides and plastic-coated shelves

Additional U-shaped trayslides and plastic-coated grid shelves can be retrofitted as required to provide extra storage options. The sturdy grid shelves have an extremely high loading capacity of up to 60 kg.

Interface converter with monitoring software

A special interface converter including the Liebherr 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. It is possible to network as many as 20 laboratory appliances and centrally document their parameters. Alarm forwarding or regular status reports to up to three email addresses can be configured as an additional feature. Alternatively, commercially available converters can be used to connect the appliances to a PC via WLAN or LAN. Software requirements: PC with Windows® operating system.

NTC product temperature sensor

An NTC product temperature sensor for logging product temperatures is available as a retrofit kit for the laboratory appliances with electronic controller. The logged product temperatures can either be read by the electronic controller or transferred to an external documentation system via the existing RS 485 interface.

Foot-pedal door opener

The optional foot-pedal opener is useful when you don't have a hand free.

Laboratory fridges, freezers and fridge-freezer combinations with electronic controls

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 laboratory 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. Alternatively commercially available converters can be used to connect the appliances to a PC via WLAN or LAN. Software requirements: PC with Windows® operating system.

NTC product temperature sensor

An NTC product temperature sensor for logging product temperatures is available as a retrofit kit for the laboratory appliances with electronic controller. The logged product temperatures can either be read by the electronic controller or transferred to an external documentation system via the existing RS 485 interface.

Additional lock barrels

Up to 10 additional lock barrels to protect the stored products against unauthorised access are available as accessories for the laboratory appliances with 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.

Stacking kit

A stacking kit is available as an accessory for combining the LKUv 1613, LKUv 1610, LKUexv 1610 and LGUex 1500 models as desired. This allows stacking a glass door appliance and solid door appliance or a refrigerator and freezer on a small footprint. In order to guarantee optimum stability, roller sets must not be fitted to appliances which are installed using a connecting frame. This is only permitted for individual appliances.

Evaporator cover

An evaporator cover can be installed for added safety, to ensure that cold-sensitive products cannot touch the evaporator.

Foot-pedal door opener

The optional foot-pedal opener is useful when you don't have a hand free.

Roller bars and adjustable legs

30 mm high roller sets can be retrofitted to the under-worktop LKUv models and height-adjustable legs can be retrofitted to the upright LKv models. The legs are adjustable between 115 mm and 170 mm in height.
In order to guarantee optimum stability, roller sets must not be fitted to appliances which are installed using a connecting frame. This is only permitted for individual appliances.

Shelves plastic-coated

Additional plastic-coated grid shelves can be retrofitted as required to provide extra storage options. The sturdy grid shelves have an extremely high loading capacity of up to 60 kg.

Laboratory fridges and freezers with electronic controls and spark-free interior

NTC spark-free product temperature sensor

An NTC product temperature sensor without metal sheath is available as a retrofit kit for registering product temperatures. The registering temperatures can either be read by the control system or transferred to an external documentation system via the RS 485 interface.

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 laboratory 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 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 laboratory appliances with 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.

Glass shelves

Additional glass shelves can be retrofitted to the LCexv, LKexv and LKUexv models as required to provide extra storage options. The glass shelves made of toughened safety glass meet the standards for spark-free fridges in accordance with ATEX and have a loading capacity of up to 40 kg.

Stacking kit

A stacking kit is available as an accessory for combining the LKUexv and LGUex models as well as other under-worktop models in the LKUv range. This allows stacking laboratory fridge-freezers on a small footprint.
In order to guarantee optimum stability, roller sets must not be fitted to appliances which are installed using a connecting frame. This is only permitted for individual appliances.

Roller bars and adjustable legs

30 mm high roller sets can be retrofitted to the under-worktop LKUexv models and height-adjustable legs can be retrofitted to the upright LKexv models. The legs are adjustable between 115 mm and 170 mm in height.
In order to guarantee optimum stability, roller sets must not be fitted to appliances which are installed using a connecting frame. This is only permitted for individual appliances.

Evaporator cover

An evaporator cover can be installed for added safety, to ensure that cold-sensitive products cannot touch the evaporator.

Laboratory fridges with analogue controls and spark-free interior

Glass shelves

Additional glass shelves can be retrofitted to the LKexv models as required to provide extra storage options. The glass shelves made of toughened safety glass meet the standards for spark-free fridges in accordance with ATEX and have a loading capacity of up to 40 kg.

Castor base

A castor base is available as an accessory for the LKexv 5400, 3600 and 2600 models to allow flexible use of the appliances in different rooms.

Adjustable legs

Adjustable-height legs can be retrofitted to the LKexv 5400, 3600 and 2600 models for easy cleaning underneath. They are adjustable between 115 mm and 170 mm in height.

Additional lock barrels

Up to 10 additional lock barrels to protect the stored products against unauthorised access are available as accessories for the laboratory appliances. 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.

Low temperature (-45°C) laboratory chest freezers

NTC product temperature sensor

An NTC product temperature sensor for logging product temperatures is available as a retrofit kit for the laboratory chest freezers. The logged product temperatures can either be read by the electronic controller or transferred to an external documentation system via the existing RS 485 interface.

Interface converter with documentation software

A special interface converter including LTM documentation software is available for central documentation of the temperature profile data and alarm events of multiple appliances via the RS 485 serial interface. It is possible to network as many as 20 laboratory appliances and centrally monitor 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 be used to connect the connected appliances to a PC via WLAN or LAN. Software requirements: PC with Windows® operating system.

Baskets

The optional baskets provide an optimum overview of the stored preparations and can help to improve the handling and organising of the freezer contents.

Laboratory

Pharmacy fridges compliant with DIN 58345

Fridges for use in pharmacies, hospitals and surgeries must meet very stringent requirements for the storage of pharmaceutical products. Liebherr pharmacy fridges 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 fridges 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 "Fridges 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

The advantages at a glance

Temperature is set at the factory to +5°C. The pharmacy fridges are equipped with an additional **safety thermostat** to prevent temperatures dropping below +2°C in case of a malfunction. In view of the potentially high value of the contents of a pharmacy fridge, this important feature gives added protection.

Volt-free contact: For forwarding alarms to an **external remote warning system**.

The precise **electronic controller** with digital display enables temperatures to be set accurately to 1/10°C. The large display allows improved temperature visibility at a glance.
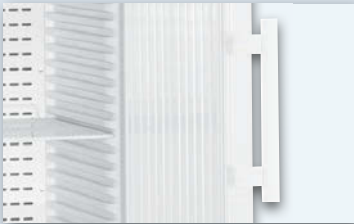
Monitoring and maintaining proper storage conditions: If the **temperature is exceeded** or not met by +2 °C and +8 °C and the door is open for longer than 1 minute, or in instances of power failure, a visual and acoustic **alarm** is triggered.

The **LED ceiling light** with separate switch on glass door models MKv 3913 and MKUv 1613 allows good visibility of the fridge contents.

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

The flush-mounted controller has an **integrated data memory**. It logs e.g. the maximum and minimum internal temperatures that occur once the set temperature is reached. The min/max temperature memory function stores the values for up to 41 days.

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

The narrow-mesh **plastic-coated wire shelves** are easily adjustable with many shelf positions for maximum flexibility and use of space. The shelves are removable at 90° door opening.

Convenient **opening of the door** requiring little force: The ergonomically designed **lever handle** enables smooth opening of the door with less shaking of the appliance. This means that samples or small stored items are safe when the door is opened.

Liebherr pharmacy fridges comply with **DIN 58345** for the storage of pharmaceutical products, thus ensuring the highest standards for protecting temperature-critical pharmacy products.

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

Access port (diameter 10 mm) allows **integration of an external temperature probe** (e.g. PT 100 or similar) in case independant temperature monitoring is required.

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

Pharmacy

Quality right down to the smallest detail

Liebherr medical storage fridges 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.

Electronic controls.
The precision 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 fridges are equipped with a safety thermostat to prevent temperatures below +2°C in case of a malfunction. The large display allows improved temperature visibility at a glance.

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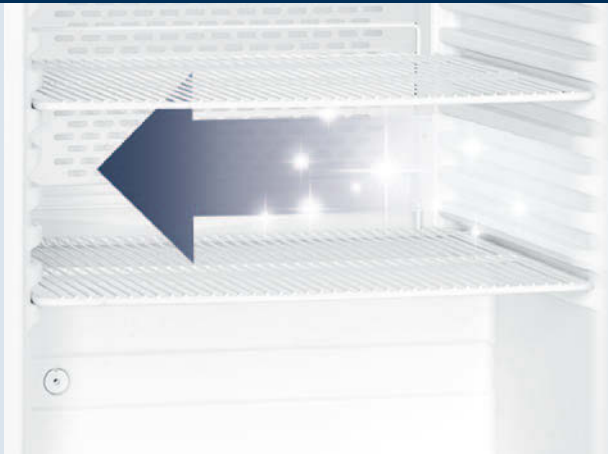
Hygienic interior for versatile use.
Added hygiene: the seamless inner liner is exceptionally easy to clean. Moulded trayslides prevent the grid shelves from tipping and allow flexible height adjustment in increments of 32 mm. The evaporator cover prevents pharmaceutical products from freezing onto the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

Drawer with organisational system.
Clear storage for fast access: Get an instant overview of the medicines in store. The flexibly adjustable organisational system allows the interior to be ordered perfectly and therefore used efficiently. The transparent front provides a quick overview of goods and thereby helps to keep the temperature stable in the appliance due to short door opening times. The sturdy aluminium body also ensures optimum cooling distribution. This keeps power consumption low and helps to maintain the quality of the medicines in the long term.
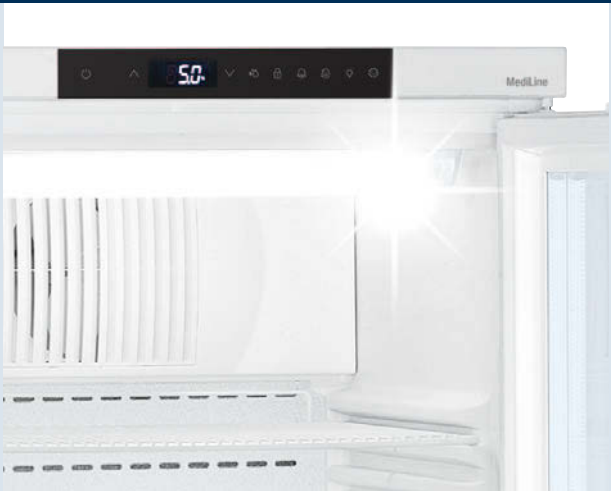
LED ceiling lighting.
The appliances with glass door (MKv 3913, MKUv 1613) have a LED ceiling light with separate switch. It ensures uniform illumination of the interior and enables fast, direct access to the stored pharmaceutical products.

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Pharmacy fridges compliant with DIN 58345	MKv 3913 LED MediLine	MKv 3910 MediLine	MKUv 1613 LED MediLine	MKUv 1610 MediLine	MKv 3913 ver. H63 LED MediLine	MKv 3910 ver. H63 MediLine	MKUv 1613 ver. H63 LED MediLine	MKUv 1610 ver. H63 MediLine
Total gross/net capacity	386/278 litre	361/280 litre	152/109 litre	142/109 litre	386/201 litre	361/202 litre	152/76 litre	142/76 litre
Exterior dimensions in mm (w/d/h)	601/618/1840	601/618/1840	601/618/820	601/618/820	601/618/1840	601/618/1840	601/618/820	601/618/820
Interior dimensions in mm (w/d/h)	440/435/1635	440/435/1635	440/435/670	440/435/670	440/435/1635	440/435/1635	440/435/670	440/435/670
Energy consumption in 365 days [1]	480 kWh	309 kWh	408 kWh	273 kWh	434 kWh	309 kWh	369 kWh	273 kWh
Ambient temperature range	+10°C to +35°C	+10°C to +35°C	+10°C to +35°C	+10°C to +35°C	+10°C to +35°C	+10°C to +35°C	+10°C to +35°C	+10°C to +35°C
Refrigerant	R 600a	R 600a	R 600a	R 600a	R 600a	R 600a	R 600a	R 600a
Sound power level	48 dB(A)	48 dB(A)	47 dB(A)	47 dB(A)	48 dB(A)	48 dB(A)	47 dB(A)	47 dB(A)
Voltage/Connection rating	220−240V~/1.5 A	220−240V~/1.5 A	220−240V~/1.0 A	220−240V~/1.0 A	220−240V~/1.5 A	220−240V~/1.5 A	220−240V~/1.0 A	220−240V~/1.0 A
Cooling system/Defrost	forced-air/automatic	forced-air/automatic	forced-air/automatic	forced-air/automatic	forced-air/automatic	forced-air/automatic	forced-air/automatic	forced-air/automatic
Temperature range	+5°C	+5°C	+5°C	+5°C	+5°C	+5°C	+5°C	+5°C
Gradient [2]/max. fluctuation [3]	6.1°C/3.9°C	4.1°C/3.6°C	5.1°C/4.9°C	4.3°C/4.6°C	3.5°C/1.5°C	2.7°C/1.5°C	4.1°C/1.5°C	2.8°C/1.3°C
External cabinet finish	steel/white	steel/white	steel/white	steel/white	steel/white	steel/white	steel/white	steel/white
Door material	glass door	steel	glass door	steel	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	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	electronic controller	electronic controller	electronic controller	electronic controller
Temperature display	external digital	external digital	external digital	external digital	external digital	external digital	external digital	external digital
Power failure alarm	immediately upon power failure for at least 12 hrs	immediately upon power failure for at least 12 hrs	immediately upon power failure for at least 12 hrs	immediately upon power failure for at least 12 hrs	immediately upon power failure for at least 12 hrs	immediately upon power failure for at least 12 hrs	immediately upon power failure for at least 12 hrs	immediately upon power failure for at least 12 hrs
Fault warning signal	visual and audible	visual and audible	visual and audible	visual and audible	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	RS 485/yes	RS 485/yes	RS 485/yes	RS 485/yes
Interior light	LED lighting, with separate switch		LED lighting, with separate switch		LED lighting, with separate switch		LED lighting, with separate switch	
Number of shelves	6	6	4	4	2	2	1	1
Adjustable shelves	5	5	3	3	0	0	0	0
Number of drawers	0	0	0	0	8	8	3	3
Usable shelf area in mm (w/d)	440/420	440/420	440/420	440/420	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	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	45 kg	45 kg	45 kg	45 kg
Handle	slimline handle with integr. opening mechanism	slimline handle with integr. opening mechanism	slimline handle with integr. opening mechanism	slimline handle with integr. opening mechanism	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism	slimline handle with integrated opening mechanism
Lock	fitted	fitted	fitted	fitted	fitted	fitted	fitted	fitted
Self-closing door	yes	yes	yes	yes	yes	yes	yes	yes
Door hinges	right, reversible on site	right, reversible on site	right, reversible on site	right, reversible on site	right, reversible on site	right, reversible on site	right, reversible on site	right, reversible on site
Gross/net weight	91/85 kg	73/67 kg	48/45 kg	41/39 kg	104/98 kg	86/81 kg	51/48 kg	44/42 kg
Accessories								
Shelf, plastic-coated	7113333	7113333	7113333	7113333	7113333	7113333	7113333	7113333
Stacking kit, white		9592697	9592697				9592697	9592697
Roller bars	9590380	9590380	9590521	9590521	9590380	9590380	9590521	9590521
Adjustable legs		9590231				9590231		
RS 485/RS 232 adapter, data log software	9590387	9590387	9590387	9590387	9590387	9590387	9590387	9590387
Additional lock barrels (up to 10)	on request	on request	on request	on request	on request	on request	on request	on request

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

[2] Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
[3] Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

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. In order to guarantee optimum stability, roller sets must not be fitted to appliances which are installed using a connecting frame. This is only permitted for individual appliances.

Roller bars

30 mm high roller bars can be retrofitted to all models to allow easy cleaning underneath. In order to guarantee optimum stability, roller sets must not be fitted to appliances which are installed using a connecting frame. This is only permitted for individual appliances.

Adjustable legs

Adjustable legs can be retrofitted to the models MKv 3910 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 fridges. 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.

Pharmacy

Professional use 2021

LIEBHERR
Fridges & freezers

Our catalog program

Liebherr commercial appliances can be found at
specialist retailers where providing first-class service
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catalogue of fridges and freezers for professional use.
Available in stores or on home.liebherr.com.

BIM data available with immediate effect
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access to a digital Liebherr-Hausgeräte library
with BIM models for the Food Service and Scientific
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