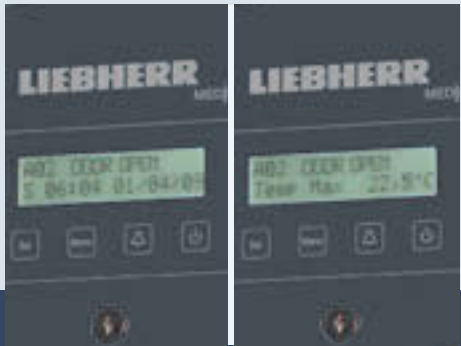


# Good reasons to choose Liebherr



## Highest performance

Liebherr research and laboratory freezers provide constant refrigeration performance even in extreme climate conditions. The use of ultra-modern components, efficient and environmentally-friendly refrigerants as well as precision controls ensures that samples, chemicals and research materials are stored optimally. 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 precision 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 in laboratory and research applications.

## Reliability

All laboratory appliances are designed according to the ISO 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 fulfill Liebherr's stringent specifications to form a well-balanced and therefore reliable system – ideal for research and laboratory.

## Easy cleaning

Hygiene plays a special role in research and in the laboratory. That is why Liebherr appliances are equipped with moulded inner liners with large radii that are easy to clean. Flush seals prevent condensation and the accumulation of dirt and dust. Sturdy castors also allow easy cleaning of the floor space underneath the appliances.

## Safety

To meet the most stringent requirements regarding reliability and accurate temperature consistency in laboratory applications, Liebherr appliances are equipped with many useful features: a visual and audible door alarm alerts the user to undesired temperature deviations. 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 Profi electronic controller (in LKPV and LGPV) is powered by a battery for 72 hours to prevent data loss. The calibration option allows precise temperature control adapted to specific applications.

## 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 a Profi electronic controller, the refrigeration components are integrated in the ceiling area, allowing easy access. The practical door remains open at 90° and is self-closing at less than 60° for convenient use. And the sturdy inner liners are easy to clean and allow variable adjustment of the grid shelves.

# The advantages at a glance



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



The **Profi electronic controller** has an integrated data memory for **temperature recording**.



Laboratory appliances with a **Profi electronic controller** are equipped with 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 temperature can be set to **1/10 °C accuracy** via the menu-guided, multilingual **Profi electronic controller** with integrated real-time clock.



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 with a **Profi electronic controller** 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 double ventilation, in conjunction with optimal routing of the air flow.

Visual and audible door **alarms** alert the user if the **door is open** for longer than 1 minute.



The **hot-gas defrost system with demand and time control** permits very short defrost cycles: 8 minutes for laboratory refrigerators, 12 minutes for laboratory freezers. To additionally improve temperature stability during defrost, the internal temperature is lowered by 1 °C (refrigerators) or 2 °C (freezers) shortly before.

In laboratory appliances with a **Profi electronic controller**, **3-point calibration** enables temperature control adapted to the user.

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

# Quality right down to the smallest detail

The Mediline range appliances with a Profi electronic controller 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.



**The Profi electronic controller.**

The menu-guided, multilingual Profi electronic controller with integrated real-time clock allows the temperature to be set to 1/10 °C accuracy. The membrane keyboard is dirt resistant and easy to clean – to meet the most stringent hygiene requirements in the laboratory.

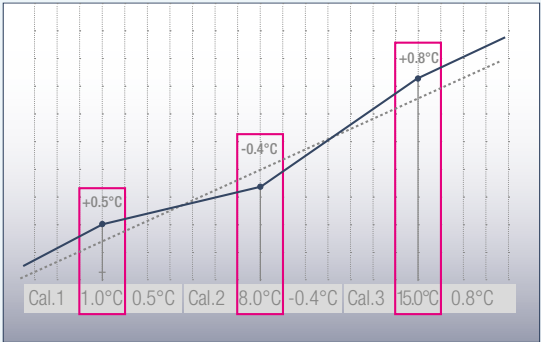


**Integrated alarm systems.**

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 Profi electronic controller is equipped with data memory which records the last 30 alarm events together with the date, time and maximum temperature. In addition, the internal temperature is logged in 4-minute intervals. The last 2,800 temperature logs are respectively available, which corresponds approximately to a 1-week logging period.



**Precision with 3-point calibration.**

The laboratory appliances with a Profi electronic controller have a 3-point calibration function for extremely accurate temperature control. This permits compensation between the set temperature and the actual internal temperature at as many as three temperature points. Positive or negative changes to the correction value can be made in steps of 0.1 K.

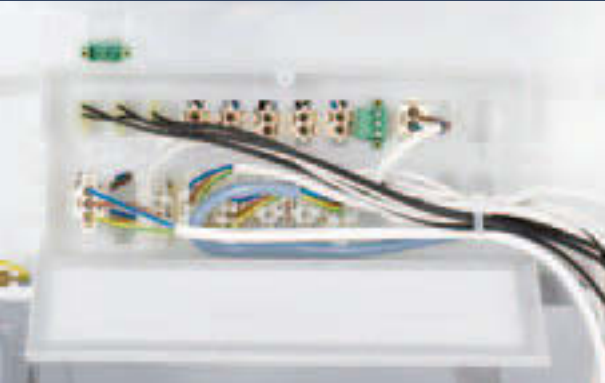


**Mains-independent power supply of the electronic controller.**

In case of power failure, the electronic controller is powered by a battery. As a result, the memory continues to log the internal temperatures without interruption for another 72 hours. If external alarm and monitoring systems have been connected, then data transfer to these is also maintained.

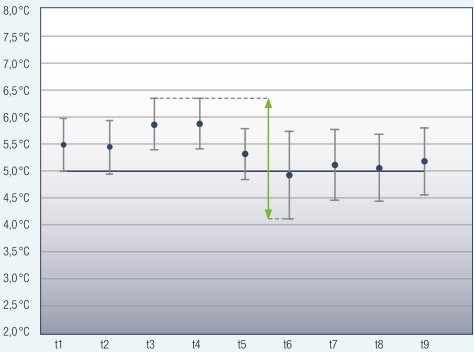
**External temperature sensor.**

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 with a Profi electronic controller are equipped with a volt-free contact for alarm forwarding to an external remote warning system. The data can be read out of the internal memory and transferred to a PC via an infrared interface. 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 ISO 60068-3 standard with regard to maximum temperature stability and consistency.

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



**Energy-efficient hot-gas defrost system.**

Defrost less often and faster: the controller calculates the optimum defrost cycles based on the compressor run-time. Then the refrigerators 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.



**Versatile interior.**

Sturdy and versatile: the U-shaped trayslides are height-adjustable – so refrigerated or frozen products of any kind can be stored optimally on the plastic-coated grid shelves. Hygienic benefit: the interior made of high-quality 304-grade stainless steel is easy to clean thanks to the large corner radii.



# The advantages at a glance



The LKexv models are **labelled** clearly and permanently on the **outer housing** in accordance with the ATEX Directive 94/9 EC, including **information for cleaning**.



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 94/9 EC.



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



# Quality right down to the smallest detail



**Certified according to ATEX 95.**  
The LKexv models are labelled clearly and permanently on the outer housing in accordance with the ATEX Directive 94/9 EC, 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 94/9 EC. The defrost water obtained during the automatic defrost cycle is collected in a tray which has to be emptied manually at regular intervals.



## Laboratory refrigerators with mechanical control and spark-free interior

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**Accessories**

**Section: Laboratory refrigerators and freezers with Profi electronic controller**

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.



Infrared key with documentation software

The alarm events and temperature profile data can be read out using the infrared key available as an accessory. Corresponding documentation software is included allowing visualisation of the read-out data on a PC.



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 a Profi 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.



**Section: Laboratory refrigerators and freezers with Comfort electronic controller and spark-free interior**

NTC spark-free product temperature sensor

An NTC product temperature sensor for logging product temperatures is available as a retrofit kit for the spark-free laboratory appliances with a Comfort 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.



Section: Laboratory refrigerators and freezers with Comfort electronic controller and spark-free interior

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 a Comfort electronic controller. In case of multiple appliances, different locks can be installed to ensure that the respective appliance can only be accessed by the staff members responsible for it.



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 refrigerators in accordance with ATEX 95 and have a loading capacity of up to 40 kg.



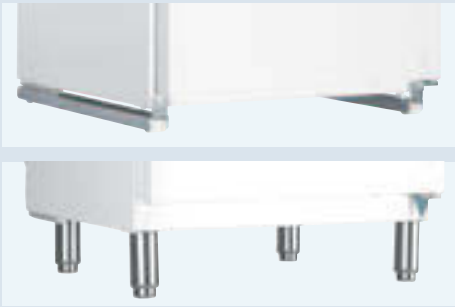
Stacking kit

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.



Roller sets and adjustable-height feet

30 mm high roller sets can be retrofitted to the under-worktop LKUexv 1610 and LGUex 1500 models and adjustable-height feet can be retrofitted to the LKexv 3910 and LGex 3410 models to allow easy cleaning underneath. The feet are adjustable between 115 mm and 170 mm in height.



Evaporator cover

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



Section: Laboratory refrigerators and laboratory fridge-freezer with Comfort electronic controller

NTC product temperature sensor

An NTC product temperature sensor for logging product temperatures is available as a retrofit kit for the laboratory appliances with a Comfort 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.



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.



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 a Comfort electronic controller. In case of multiple appliances, different locks can be installed to ensure that the respective appliance can only be accessed by the staff members responsible for it.



Stacking kit

A stacking kit is available 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.

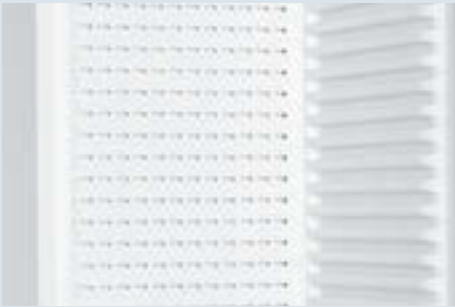




Section: Laboratory refrigerators and laboratory fridge-freezer with Comfort electronic controller

Evaporator cover

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



Roller sets and adjustable-height feet

30 mm high roller sets can be retrofitted to the under-worktop LKUv models and adjustable-height feet can be retrofitted to the LKv models to allow easy cleaning underneath. The feet are adjustable between 115 mm and 170 mm in height.



Plastic-coated grid shelves

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 45 kg.



Section: Laboratory chest freezers up to -45° C

NTC product temperature sensor

An NTC product temperature sensor for logging product temperatures is available as a retrofit kit for the laboratory chest freezers with a Comfort 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.



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.



Optional high-quality 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.



Section: Laboratory refrigerators with analogue controls and spark-free interior

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 refrigerators in accordance with ATEX 95 and have a loading capacity of up to 40 kg.



Castor base

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



Adjustable-height feet

Adjustable-height feet can be retrofitted to the LKexv 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 with a Comfort electronic controller. In case of multiple appliances, different locks can be installed to ensure that the respective appliance can only be accessed by the staff members responsible for it.





# WolfLabs

**Pricing on any accessories shown can be found by keying the part number into the search box on our website.**

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