

# 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.

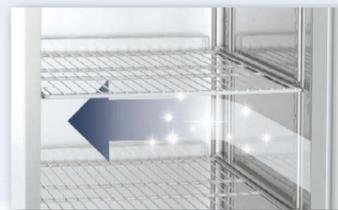


The **Profi electronic controller** has an integrated data memory for **temperature recording**.



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.



72 hours

### 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.

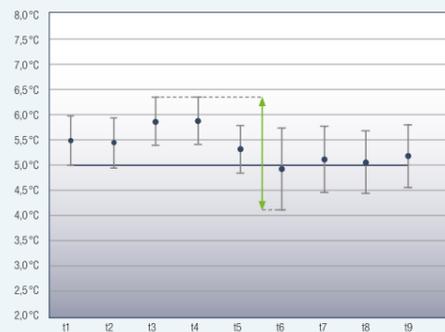
### External temperature sensor.

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.

## Laboratory refrigerators with Profi electronic controller

## Laboratory freezers with Profi electronic controller



### Laboratory refrigerators and freezers with Profi electronic controller

|  | <b>LKPv 1423</b><br>MediLine                         | <b>LKPv 8420</b><br>MediLine                               | <b>LKPv 6523</b><br>MediLine                               | <b>LKPv 6520</b><br>MediLine                               | <b>LGPv 1420</b><br>MediLine                         | <b>LGPv 8420</b><br>MediLine                               | <b>LGPv 6520</b><br>MediLine                               |
|--|--|--|--|--|--|--|--|
| <b>Gross capacity</b>                    | 1427 litre   | 856 litre  | 601 litre  | 601 litre  | 1427 litre   | 856 litre  | 601 litre  |
| <b>Exterior dimensions in mm (w/d/h)</b> | 1430/830/2150  | 790/980/2150   | 700/830/2150   | 700/830/2150   | 1430/830/2150  | 790/980/2150   | 700/830/2150   |
| <b>Interior dimensions in mm (w/d/h)</b> | 1250/700/1550  | 620/850/1550   | 520/700/1550   | 520/700/1550   | 1250/700/1550  | 620/850/1550   | 520/700/1550   |
| <b>Energy consumption in 24 h *</b>      | 3.923 kWh  | 2.400 kWh  | 2.731 kWh  | 1.775 kWh  | 8.887 kWh  | 5.500 kWh  | 4.715 kWh  |
| <b>General</b>                           |  |  |  |  |  |  |  |
| Cooling system                           | forced-air   | forced-air   | forced-air   | forced-air   | forced-air   | forced-air   | forced-air   |
| Defrost                                  | automatic  | automatic  | automatic  | automatic  | automatic  | automatic  | automatic  |
| Temperature range                        | 0°C to +16°C   | -2°C to +16°C  | 0°C to +16°C   | -2°C to +16°C  | -10°C to -26°C                                       | -10°C to -35°C <sup>1)</sup>                               | -10°C to -35°C <sup>1)</sup>                               |
| External cabinet finish                  | steel/white  | steel/white  | steel/white  | steel/white  | steel/white  | steel/white  | steel/white  |
| Door/lid material                        | glass door   | steel  | glass door   | steel  | steel  | 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                                  | 304-grade stainless steel                                  |
| Type of control                          | electronic controller with text display              | electronic controller with text display                    | electronic controller with text display                    | electronic controller with text display                    | electronic controller with text display              | electronic controller with text display                    | electronic controller with text display                    |
| Temperature display                      | external digital                                     | external digital   | external digital   | external digital   | external digital                                     | external digital   | external digital   |
| Power failure alarm                      | immediately upon power failure for 72hrs             | immediately upon power failure for 72hrs                   | immediately upon power failure for 72hrs                   | immediately upon power failure for 72hrs                   | immediately upon power failure for 72hrs             | immediately upon power failure for 72hrs                   | immediately upon power failure for 72hrs                   |
| Fault: warning signal                    | 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   |
| Interior light                           | LED lighting, with separate switch                   |  | LED lighting, with separate switch                         |  |  |  |  |
| Adjustable shelves                       | 8  | 4  | 4  | 4  | 8  | 4  | 4  |
| Usable shelf area in mm (w/d)            | 1250/650   | 620/800  | 520/650  | 520/650  | 1250/650   | 620/800  | 520/650  |
| 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                                | wire shelves plastic-coated                                |
| Shelf loading                            | 60 kg  | 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, 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, 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                              | full-length integrated handle                              |
| Lock                                     | fitted   | fitted   | fitted   | fitted   | fitted   | fitted   | fitted   |
| Self-closing door                        | 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                                  |
| Gross/net weight                         | 284/229 kg   | 187/154 kg   | 167/141 kg   | 158/132 kg   | 262/219 kg   | 197/164 kg   | 171/143 kg   |
| Climate rating                           | T (5)  | T (5)  | T (5)  | T (5)  | T (5)  | T (5)  | T (5)  |
| Sound power level                        | 58 dB(A)   | 58 dB(A)   | 58 dB(A)   | 58 dB(A)   | 60 dB(A)   | 60 dB(A)   | 60 dB(A)   |
| Refrigerant                              | R 290  | R 290  | R 290  | R 290  | R 290  | R 290  | R 290  |
| Voltage/Connection rating                | 220-240V~/3.0 A                                      | 220-240V~/2.0 A  | 220-240V~/2.0 A  | 220-240V~/2.0 A  | 220-240V~/4.5 A                                      | 220-240V~/4.0 A  | 220-240V~/4.0 A  |
| <b>Accessories</b>                       |  |  |  |  |  |  |  |
| Shelf, plastic-coated                    | 7112393  | 7113643  | 7112393  | 7112393  | 7112393  | 7113643  | 7112393  |
| U-shaped trayslide, right                | 9001761  | 9005067  | 9001761  | 9001761  | 9001761  | 9005067  | 9001761  |
| U-shaped trayslide, left                 | 9001757  | 9005069  | 9001757  | 9001757  | 9001757  | 9005069  | 9001757  |
| Infrared key incl. software              | 9590389  | 9590389  | 9590389  | 9590389  | 9590389  | 9590389  | 9590389  |
| RS 485/RS 232 adapter, data log software | 9590387  | 9590387  | 9590387  | 9590387  | 9590387  | 9590387  | 9590387  |
| NTC product temperature probe            | 9590407  | 9590407  | 9590407  | 9590407  | 9590407  | 9590407  | 9590407  |
| <b>Also available as</b>                 | <b>LKPv 1420</b> with solid doors                    |  |  |  |  |  |  |

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

<sup>1)</sup> The temperature range is valid at a maximum ambient temperature of +30°C



# WolfLabs

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The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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