

# Fridges and freezers Research and laboratory

Fridges and freezers for use in the laboratory and in research have to meet very stringent requirements, especially with regard to safety and temperature consistency. Liebherr appliances are therefore equipped with many functions and features to ensure optimum storage of sensitive samples, critical chemicals and research materials. The precise electronic controller enables accurate temperature setting and creates optimum storage conditions in conjunction with highly effective insulation and the dynamic cooling system. Integrated visual and audible alarm systems warn the user of undesired temperature deviations. Liebherr fridges and freezers provide the safety that is essential in the laboratory and research sector – 24 hours a day, 365 days a year.

# 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**.

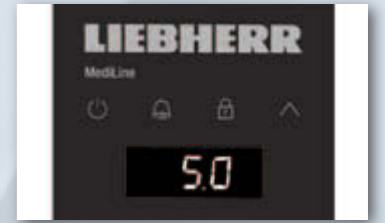
To increase the **net capacity** of the inner liner, functional parts like fans and evaporators are located **outside** the refrigerator compartment to save space.



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

# Quality right down to the smallest detail

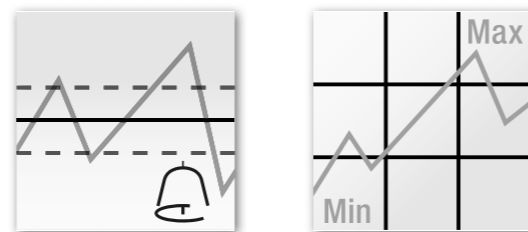
The Mediline range appliances are equipped with many features to guarantee the safety of stored products and temperature stability in the interior. High-quality materials and precise workmanship, extremely efficient refrigeration components as well

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.

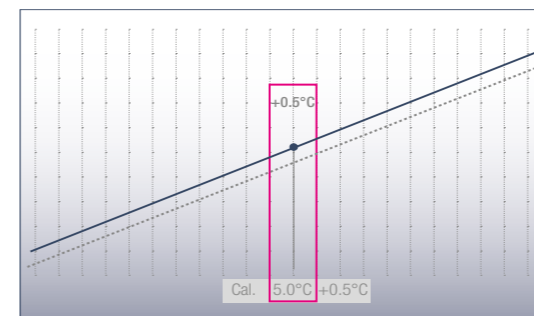


### Integrated alarm systems.

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.

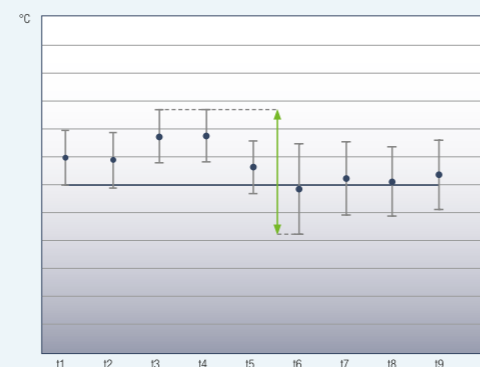
### External temperature sensor.

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.



Heavy-duty fridges	LKpV 1423 MediLine	LED	LKpV 1420 MediLine	LKpV 8420 MediLine	LKpV 6523 MediLine	LED	LKpV 6520 MediLine	LKpV 6527 MediLine
<b>Gross capacity</b>	1361 litre		1361 litre	856 litre	597 litre		597 litre	596 litre
<b>Exterior dimensions in mm (w/d/h)</b>	1430/830/2160		1430/830/2160	790/980/2160	700/830/2160		700/830/2160	700/830/2160
<b>Interior dimensions in mm (w/d/h)</b>	1236/650/1500		1236/650/1550	620/850/1550	533/650/1500		533/650/1550	533/650/1550
Energy consumption in 365 days <sup>1</sup>	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* / max. fluctuation**	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		254/199 kg	178/147 kg	163/136 kg		152/126 kg	155/129 kg
<b>Accessories</b>								
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	

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

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

\*\* 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
<b>Gross capacity</b>	1361 litre	856 litre	597 litre	596 litre
<b>Exterior dimensions in mm (w/d/h)</b>	1430/830/2160	790/980/2160	700/830/2160	700/830/2160
<b>Interior dimensions in mm (w/d/h)</b>	1236/650/1550	620/850/1550	533/650/1550	533/650/1550
Energy consumption in 365 days <sup>1</sup>	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 <sup>2</sup>	–9 °C to –35 °C <sup>2</sup>	–9 °C to –35 °C <sup>2</sup>
Gradient* / max. fluctuation**	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	182/152 kg	160/133 kg	162/136 kg
<b>Accessories</b>				
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	

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

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



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