

Refrigerators and freezers
Research and laboratory
2015/2016



LIEBHERR

Quality, Design and Innovation

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committed to science



Liebherr laboratory refrigerators and freezers

Refrigerators 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 precision 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 refrigerators and freezers provide the safety that is essential in the laboratory and research sector - 24 hours a day, 365 days a year.

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Good reasons to choose Liebherr



Highest performance

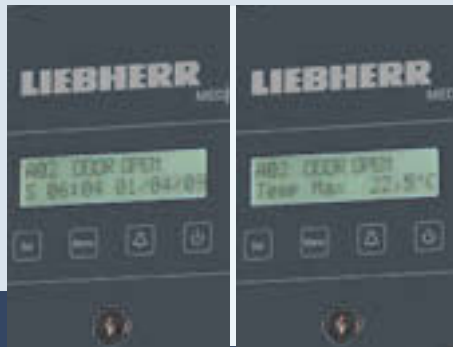
Liebherr research and laboratory freezers provide constant refrigeration performance even in extreme climate conditions. The use of ultra-modern components, efficient and environmentally-friendly refrigerants as well as precision controls ensures that samples, chemicals and research materials are stored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



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.

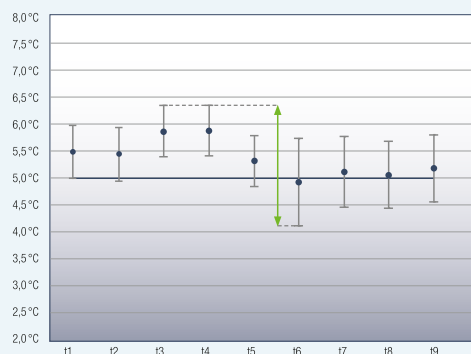
Integrated data memory.

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.



External temperature and alarm documentation.

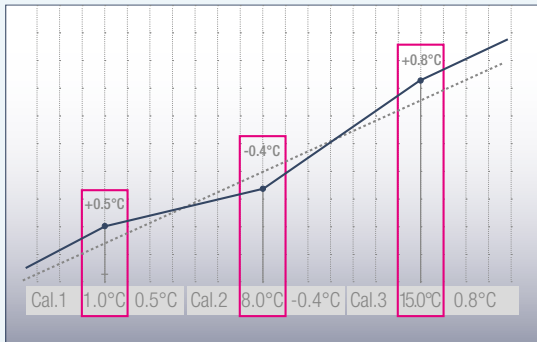
The laboratory appliances with a Profi electronic controller are equipped with a volt-free contact for alarm forwarding to an external remote warning system. The data can be read out of the internal memory and transferred to a PC via an infrared interface. In addition the appliances have an RS 485 interface 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.

refrigeration components as well as documentation and alarm functions ensure optimum storage of sensitive samples, chemicals and research materials.



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.

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.

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 refrigerators and freezers with Profi electronic controller	LKPv 1423	LKPv 8420	LKPv 6523
	MediLine	MediLine	MediLine
Gross capacity	1427 litre	856 litre	601 litre
Exterior dimensions in mm (w/d/h)	1430/830/2150	790/980/2150	700/830/2150
Interior dimensions in mm (w/d/h)	1250/700/1550	620/850/1550	520/700/1550
Energy consumption in 24 h *	3.923 kWh	2.400 kWh	2.731 kWh
General			
Cooling system	forced-air	forced-air	forced-air
Defrost	automatic	automatic	automatic
Temperature range	0°C to +16°C	-2°C to +16°C	0°C to +16°C
External cabinet finish	steel/white	steel/white	steel/white
Door/lid material	glass door	steel	glass door
Internal liner material	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
Temperature display	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
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		LED lighting, with separate switch
Adjustable shelves	8	4	4
Usable shelf area in mm (w/d)	1250/650	620/800	520/650
Shelf material	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated
Shelf loading	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
Handle	full-length integrated handle	full-length integrated handle	full-length integrated handle
Lock	fitted	fitted	fitted
Self-closing door	yes	yes	yes
Door hinges		right, reversible on site	right, reversible on site
Gross/net weight	284/229 kg	187/154 kg	167/141 kg
Climate rating	T (5)	T (5)	T (5)
Sound power level	58 dB(A)	58 dB(A)	58 dB(A)
Refrigerant	R 290	R 290	R 290
Voltage/Connection rating	220–240V~/3.0 A	220–240V~/2.0 A	220–240V~/2.0 A
Accessories			
Shelf, plastic-coated	7112393	7113643	7112393
U-shaped trayslide, right	9001761	9005067	9001761
U-shaped trayslide, left	9001757	9005069	9001757
Infrared key incl. software	9590389	9590389	9590389
RS 485/RS 232 adapter, data log software	9590387	9590387	9590387
NTC product temperature probe	9590407	9590407	9590407
Also available as	LKPv 1420 with solid doors		

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

Laboratory freezers with Profi electronic controller



LKPv 6520

MediLine

601 litre
700/830/2150
520/700/1550
1.775 kWh

forced-air
automatic
-2°C to +16°C
steel/white
steel
304-grade stainless steel
electronic controller with text display
external digital
immediately upon power failure for 72hrs
visual and audible
RS 485/yes

4
520/650
wire shelves plastic-coated
60 kg
castors with brake at the front,
fixed castors at the rear
full-length integrated handle
fitted
yes
right, reversible on site
158/132 kg
T (5)
58 dB(A)
R 290
220–240V~/2.0 A

7112393
9001761
9001757
9590389
9590387
9590407

LGPv 1420

MediLine

1427 litre
1430/830/2150
1250/700/1550
8.887 kWh

forced-air
automatic
-10°C to -26°C
steel/white
steel
304-grade stainless steel
electronic controller with text display
external digital
immediately upon power failure for 72hrs
visual and audible
RS 485/yes

8
1250/650
wire shelves plastic-coated
60 kg
castors with brake at the front,
castors at the rear
full-length integrated handle
fitted
yes
262/219 kg
T (5)
60 dB(A)
R 290
220–240V~/4.5 A

7112393
9001761
9001757
9590389
9590387
9590407

LGPv 8420

MediLine

856 litre
790/980/2150
620/850/1550
5.500 kWh

forced-air
automatic
-10°C to -35°C ¹⁾
steel/white
steel
304-grade stainless steel
electronic controller with text display
external digital
immediately upon power failure for 72hrs
visual and audible
RS 485/yes

4
620/800
wire shelves plastic-coated
60 kg
castors with brake at the front,
fixed castors at the rear
full-length integrated handle
fitted
yes
right, reversible on site
197/164 kg
T (5)
60 dB(A)
R 290
220–240V~/4.0 A

7113643
9005067
9005069
9590389
9590387
9590407

LGPv 6520

MediLine

601 litre
700/830/2150
520/700/1550
4.715 kWh

forced-air
automatic
-10°C to -35°C ¹⁾
steel/white
steel
304-grade stainless steel
electronic controller with text display
external digital
immediately upon power failure for 72hrs
visual and audible
RS 485/yes

4
520/650
wire shelves plastic-coated
60 kg
castors with brake at the front,
fixed castors at the rear
full-length integrated handle
fitted
yes
right, reversible on site
171/143 kg
T (5)
60 dB(A)
R 290
220–240V~/4.0 A

7112393
9001761
9001757
9590389
9590387
9590407

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

The advantages at a glance



The laboratory appliances with a **Comfort electronic controller** 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 with a Comfort electronic controller.



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



The **glass shelves** of the laboratory refrigerators 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 **precision Comfort electronic controller** with digital temperature display allows **accurate temperature setting to 1/10 °C**.



All laboratory refrigerators and freezers with **spark-free interior** are tested according to the 94/9 EC (ATEX 95) Directive.



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



Laboratory appliances with a **Comfort 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 are replaceable.

Quality right down to the smallest detail

Liebherr offers refrigerators and freezers with a Comfort electronic controller and spark-free interior especially for storing explosive and highly flammable substances in the chemical industry. The inner liners meet the safety requirements of the EU Directive 94/9 EG



Certified according to ATEX 95.

All appliances with spark-free interior are tested according to the 94/9 EC (ATEX 95) Directive. Rated as II 3G Ex nA II T6, these appliances are suitable for storing explosive and highly flammable substances in sealed containers.



The Comfort electronic controller.

The precision Comfort 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.



Integrated alarm systems.

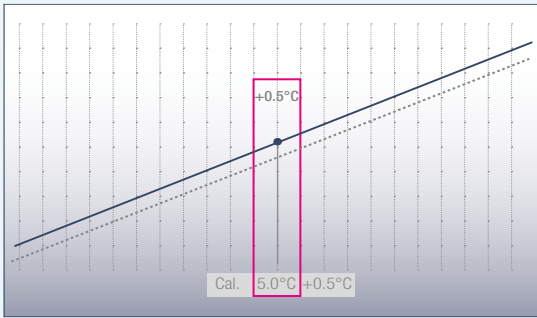
Visual and audible alarm systems alert the user to undesired temperature deviations or when the door is open. All alarm parameters can be individually set. For example, the door-open alarm delay can be adjusted between 1 and 5 minutes. Furthermore, the laboratory appliances with a Comfort electronic controller have a visual power failure alarm and a sensor defect alarm.



Integrated data memory.

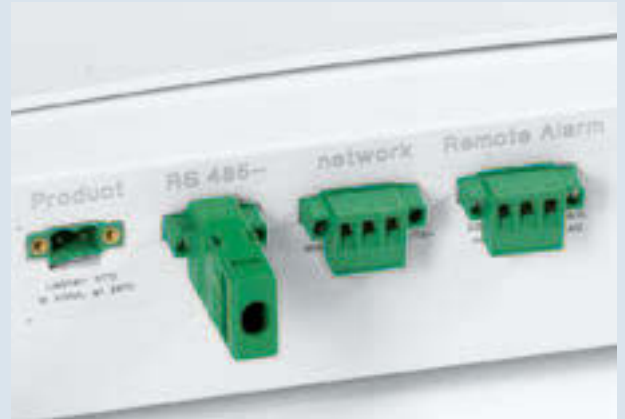
The Comfort electronic controller is equipped with an integrated data memory which logs the maximum and minimum internal temperatures as well as the last three temperature alarms and power failures, together with the time, date and duration. These data can be read out on the display.

(ATEX 95) and have been tested according to the EN 1127-1, IEC 60079-0 and IEC 60079-15 standards by electrosuisse – SEV (Swiss Association for Electrical Engineering, Power and Information Technologies), an approved ATEX conformity evaluation organisation.



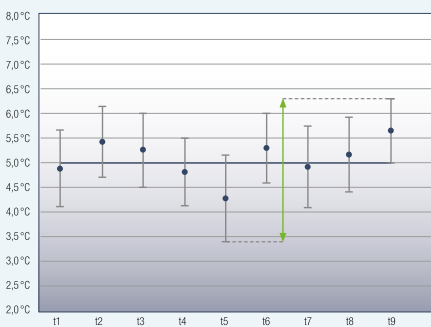
Accurate 1-point calibration.

The laboratory appliances with a Comfort electronic controller 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.



Maximum temperature consistency.

Maximum temperature stability is ensured by the cooling systems of the laboratory refrigerators and freezers in conjunction with the precision Comfort electronic controller. The refrigerators are equipped with a safety thermostat to prevent temperatures below +2 °C in case of a fault. All laboratory appliances with a Comfort electronic controller are designed according to the ISO 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 a Comfort electronic controller have an access port (diameter 10 mm) on the rear which allows the temperature sensor to be positioned in the interior.

Laboratory fridge-freezer with Comfort electronic controller and spark-free interior



Laboratory fridge-freezer

with Comfort electronic controller and spark-free interior

LCexv 4010 Mediline

Laboratory refrigerators and freezers

with Comfort electronic controller and spark-free interior

Total gross / net capacity	fridge compartment
Total gross / net capacity	freezer compartment
Exterior dimensions in mm (w/d/h)	
Interior dimensions in mm (w/d/h)	fridge compartment
Interior dimensions in mm (w/d/h)	freezer compartment
Energy consumption in 24 h *	

General

Cooling system	fridge / freezer comp.
Defrost	fridge / freezer comp.
Temperature range	fridge / freezer comp.
External cabinet finish	
Door / lid material	
Internal liner material	
Type of control	
Temperature display	
Power failure alarm	
Fault: warning signal	
Interface / Volt-free alarm contact	
Adjustable shelves	fridge compartment
Usable shelf area in mm (w/d)	fridge compartment
Shelf material	fridge / freezer comp.
Shelf loading	fridge / freezer comp.
Drawers	freezer compartment
Handle	
Lock	
Self-closing door	
Door hinges	
Gross / net weight	
Climate rating	
Sound power level	
Refrigerant	
Voltage / Connection rating	

Accessories

Glass shelf	
NTC product temperature probe	
RS 485 / RS 232 adapter, data log software	
Additional lock barrels (up to 10)	

254 / 240 litre
107 / 105 litre
600 / 615 / 2000
440 / 435 / 1105
431 / 435 / 597
1.800 kWh

forced-air / static
automatic / manual
+3°C to +16°C / -9°C to -30°C
steel / white
steel
commercial grade moulded polystyrol
electronic controller
external digital
when mains power return
visual and audible
RS 485 / yes
4
440 / 420
glass / glass
40 kg / 24 kg
3
ergonomic slimline handle
fitted
yes
right, reversible on site
93 / 87 kg
SN-ST
52 dB(A)
R 600a
220 – 240V~ / 1.5 A

9293629
9590145
9590387
on request

Total gross / net capacity
Exterior dimensions in mm (w/d/h)
Interior dimensions in mm (w/d/h)
Energy consumption in 24 h *

General
Cooling system / Defrost
Temperature range
External cabinet finish
Door / lid material
Internal liner material
Type of control
Temperature display
Power failure alarm
Fault: warning signal
Interface / Volt-free alarm contact
Adjustable shelves
Usable shelf area in mm (w/d)
Shelf material
Shelf loading
Drawers / Number of baskets
Compartment height in mm
Handle
Lock
Self-closing door
Door hinges
Gross / net weight
Climate rating
Sound power level
Refrigerant
Voltage / Connection rating

Accessories

Glass shelf
Stacking kit, white
Roller bars
Evaporator cover, white
Adjustable legs
NTC product temperature probe
RS 485 / RS 232 adapter, data log software
Additional lock barrels (up to 10)

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



LKexv 3910 MediLine	LKUexv 1610 MediLine	LGex 3410 MediLine	LGUex 1500 MediLine
360/344 litre	141/130 litre	310/284 litre	139/129 litre
600/615/1840	600/615/820	600/615/1840	600/615/820
440/435/1635	440/435/670	420/400/1587	454/450/663
0.865 kWh	0.863 kWh	1.309 kWh	0.926 kWh
forced-air/automatic	forced-air/automatic	static/manual	static/manual
+3°C to +16°C	+3°C to +16°C	-9°C to -30°C	-9°C to -26°C
steel/white	steel/white	steel/white	steel/white
steel	steel	steel	steel
commercial grade moulded polystyrol	commercial grade moulded polystyrol	commercial grade moulded polystyrol	commercial grade moulded polystyrol
electronic controller	electronic controller	electronic controller	electronic controller
external digital	external digital	external digital	external digital
when mains power return	when mains power return	when mains power return	when mains power return
visual and audible	visual and audible	visual and audible	visual and audible
RS 485/yes	RS 485/yes	RS 485/yes	RS 485/yes
5	3		
440/420	440/420		
glass	glass	evaporator plates	evaporator plates
40 kg	40 kg	24 kg	24 kg
		8/-	3/1
		185	149
ergonomic slimline handle	ergonomic slimline handle	ergonomic slimline handle	ergonomic slimline handle
fitted	fitted	fitted	fitted
yes	yes	yes	yes
right, reversible on site	right, reversible on site	right, reversible on site	right, reversible on site
74/68 kg	41/39 kg	92/87 kg	45/42 kg
SN-ST	SN-ST	SN-ST	SN-ST
48 dB(A)	45 dB(A)	45 dB(A)	45 dB(A)
R 600a	R 600a	R 600a	R 600a
220-240V~/1.5 A	220-240V~/1.0 A	220-240V~/1.5 A	220-240V~/1.0 A
9293629	9293629		
	9876687		9876687
	9590521		9590521
9590525	9590523		
9590233		9590233	
9590145	9590145	9590145	9590145
9590387	9590387	9590387	9590387
on request	on request	on request	on request

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

The advantages at a glance



Volt-free contact for forwarding alarms to an **external remote warning system** in laboratory appliances with a Comfort electronic controller.



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



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°.

Access port for integration of the optionally available NTC temperature sensor or independent temperature sensor PT 100 or similar measuring instruments in laboratory appliances with a Comfort electronic controller.



The **drawers** in the LCv 4010 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 **precision Comfort 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.



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



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

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 **precision Comfort electronic controller** ensures maximum temperature stability and high temperature consistency in the interior.

Quality right down to the smallest detail

Liebherr Mediline laboratory refrigerators the ideal solution for a small footprint or for under-worktop integration. The range comprises two freestanding and under-worktop refrigerators with a glass door or a solid door. The precision Comfort electronic



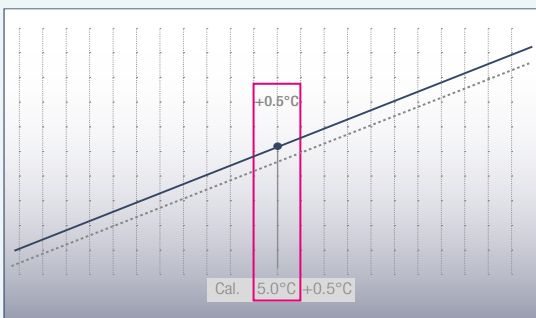
The Comfort electronic controller.

The precision Comfort electronic controller with digital temperature display enables temperatures to be set accurately. Symbols indicate the operating status of the appliance. The electronic controller is flush-mounted and equipped with a membrane keyboard for perfect hygiene.



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. Additional safety is provided by a visual power failure alarm and sensor defect alarm.



Accurate 1-point calibration.

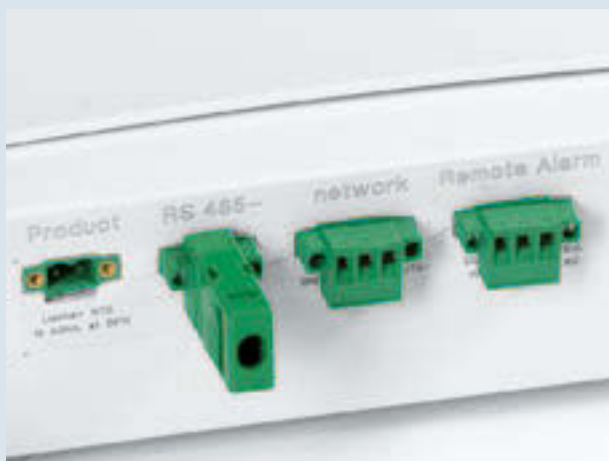
The laboratory appliances with a Comfort electronic controller are equipped with 1-point calibration for accurate temperature control. This permits compensation between the set temperature and the actual internal temperature. Positive or negative changes to the correction value can be made in steps of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



Integrated data memory.

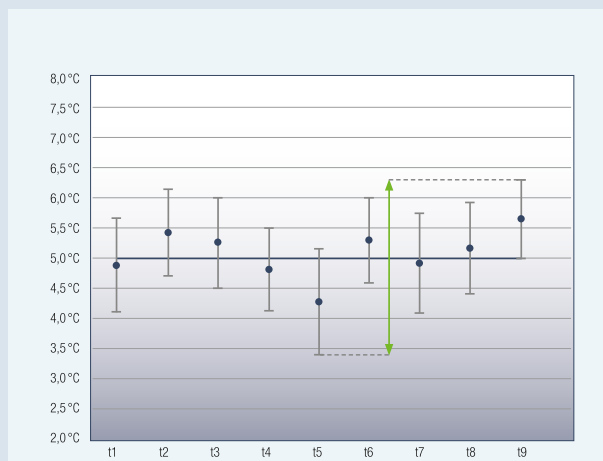
The Comfort electronic controller is equipped with an integrated data memory which logs the maximum and minimum internal temperatures as well as the last three temperature alarms and power failures, together with the time, date and duration. These data can be read out on the display.

controller enables temperatures to be set accurately. The dynamic cooling system ensures high temperature consistency. Integrated alarm systems guarantee safe storage.



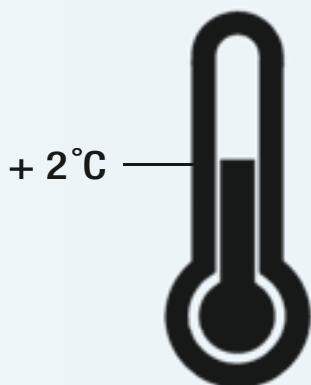
External temperature and alarm documentation.

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 precision Comfort electronic controller ensures maximum temperature stability. All laboratory appliances with a Comfort electronic controller are designed according to the ISO 60068-3 standard with regard to optimum temperature consistency.



Safety thermostat.

The laboratory appliances are equipped with an additional safety thermostat to prevent temperatures below +2°C and to protect sensitive products in the event of a fault.



External temperature sensor.

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

Laboratory refrigerators with Comfort electronic controller



Laboratory refrigerators with Comfort electronic controller	LKv 3913 MediLine 	LKv 3910 MediLine 	LKUv 1613 MediLine 
Total gross / net capacity	360/344 litre	360/344 litre	141/130 litre
Exterior dimensions in mm (w/d/h)	600/615/1840	600/615/1840	600/615/820
Interior dimensions in mm (w/d/h)	440/435/1635	440/435/1635	440/435/670
Energy consumption in 24 h *	1.315 kWh	0.846 kWh	1.010 kWh
General			
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
External cabinet finish	steel/white	steel/white	steel/white
Door/lid material	glass door	steel	glass door
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		LED lighting, with separate switch
Adjustable shelves	5	5	3
Usable shelf area in mm (w/d)	440/420	440/420	440/420
Shelf material	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated
Shelf loading	45 kg	60 kg	45 kg
Handle	ergonomic slimline handle	ergonomic slimline handle	ergonomic slimline handle
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	90/84 kg	71/65 kg	46/43 kg
Climate rating	SN-ST	SN-ST	SN-ST
Sound power level	48 dB(A)	48 dB(A)	45 dB(A)
Refrigerant	R 600a	R 600a	R 600a
Voltage/Connection rating	220–240V~/1.5 A	220–240V~/1.5 A	220–240V~/1.0 A
Accessories			
Shelf, plastic-coated	7112313	7112313	7112313
Stacking kit, white			9876687
Roller bars			9590521
Evaporator cover, white	9590525	9590525	9590523
Adjustable legs	9590233	9590233	
NTC product temperature probe	9590407	9590407	9590407
RS 485/RS 232 adapter, data log software	9590387	9590387	9590387
Additional lock barrels (up to 10)	on request	on request	on request

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

Laboratory fridge-freezer with Comfort electronic controller



LKUv 1610

MediLine

141 / 130 litre

600 / 615 / 820

440 / 435 / 670

0.747 kWh

forced-air

automatic

+3°C to +16°C

steel / white

steel

commercial grade moulded polystyrol

electronic controller

external digital

when mains power return

visual and audible

RS 485 / yes

3

440 / 420

wire shelves plastic-coated

60 kg

ergonomic slimline handle

fitted

yes

right, reversible on site

39 / 37 kg

SN-ST

45 dB(A)

R 600a

220-240V~ / 1.0 A

7112313

9876687

9590521

9590523

9590407

9590387

on request

Laboratory fridge-freezer

with Comfort electronic controller

Total gross / net capacity fridge compartment

Total gross / net capacity freezer compartment

Exterior dimensions in mm (w/d/h)

Interior dimensions in mm (w/d/h) fridge compartment

Interior dimensions in mm (w/d/h) freezer compartment

Energy consumption in 24 h *

General

Cooling system fridge/freezer comp.

Defrost fridge/freezer comp.

Temperature range fridge/freezer comp.

External cabinet finish

Door / lid material

Internal liner material

Type of control

Temperature display

Power failure alarm

Fault: warning signal

Interface / Volt-free alarm contact

Adjustable shelves fridge compartment

Usable shelf area in mm (w/d) fridge compartment

Shelf material fridge/freezer comp.

Shelf loading fridge/freezer comp.

Drawers freezer compartment

Handle

Lock

Self-closing door

Door hinges

Gross/net weight

Climate rating

Sound power level

Refrigerant

Voltage / Connection rating

Accessories

Grid shelf, plastic-coated, for fridge compartment

Evaporator cover, white, for fridge compartment

NTC product temperature probe

RS 485 / RS 232 adapter, data log software

Additional lock barrels (up to 10)

LCv 4010

MediLine

254 / 240 litre

107 / 105 litre

600 / 615 / 2000

440 / 435 / 1105

431 / 435 / 597

1.800 kWh

forced-air / static

automatic / manual

+3°C to +16°C / -9°C to -30°C

steel / white

steel

commercial grade moulded polystyrol

electronic controller

external digital

when mains power return

visual and audible

RS 485 / yes

4

440 / 420

wire shelves plastic-coated / glass

45 kg / 24 kg

3

ergonomic slimline handle

fitted

yes

right, reversible on site

91 / 85 kg

SN-ST

52 dB(A)

R 600a

220-240V~ / 1.5 A

7112313

9590391

9590407

9590387

on request

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

The advantages at a glance

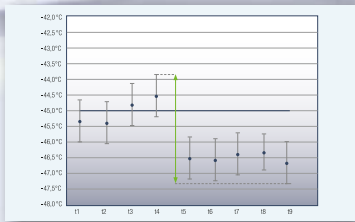


Visual and audible temperature alarms alert the user if **temperature deviation limits** are exceeded. The parameters for the temperature alarm can be individually set. The integrated data memory with min/max temperatures in the **Comfort electronic controller**

logs possible 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 ISO 60068-3.

Volt-free contact in chest freezers with Comfort electronic controller for forwarding alarms to an **external remote warning system**.

Precision Comfort 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 precision Comfort electronic controller ensures **maximum temperature stability** and **high temperature consistency** in the interior.

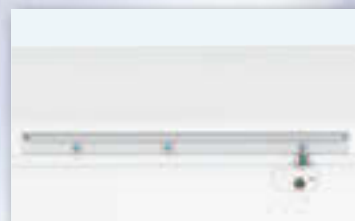
Stop Frost

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 300,000 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 with a **Comfort electronic controller** are equipped with **1-point calibration** for accurate temperature control.

Quality right down to the smallest detail

The Liebherr laboratory chest freezers up 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



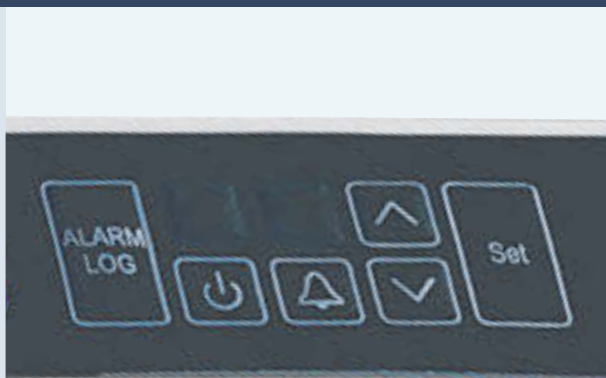
External temperature and alarm documentation.

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 Comfort electronic controller.

The precision Comfort 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.



Integrated alarm systems.

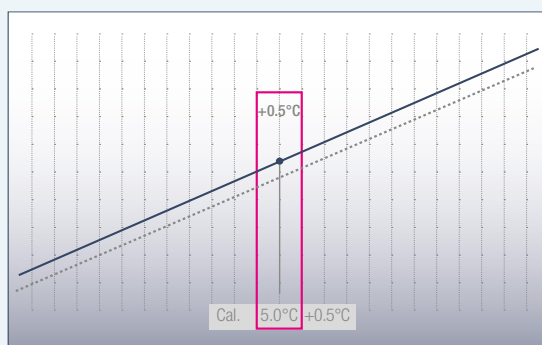
Visual and audible alarm systems alert the user to undesired temperature deviations or when the door is open. All alarm parameters can be individually set. For example, the lid-open alarm delay can be adjusted between 1 and 5 minutes. Additional safety is provided by a visual power failure alarm and sensor defect alarm.



Integrated data memory.

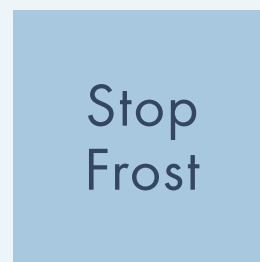
The Comfort electronic controller is equipped with an integrated data memory which logs the maximum and minimum internal temperatures as well as the last three temperature alarms and power failures, together with the time, date and duration. These data can be read out on the display.

consistency. Integrated alarm systems and external temperature and alarm monitoring contribute to the safe storage of samples, chemicals and research materials.



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.



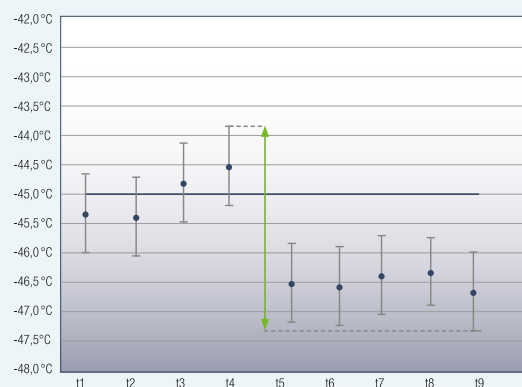
StopFrost System.

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.



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 precision Comfort electronic controller ensures maximum temperature stability. All laboratory chest freezers with a Comfort electronic controller are designed according to the ISO 60068-3 standard with regard to optimum temperature consistency.

Laboratory chest freezers up to -45°C



Laboratory chest freezers

up to -45°C

LGT 4725 MediLine



Total gross / net capacity	459/431 litre
Exterior dimensions in mm (w/d/h)	1648/808/919
Interior dimensions in mm (w/d/h)	1445/500/650
Energy consumption in 24 h *	4.352 kWh
General	
Cooling system	static
Defrost	manual
Temperature range	-10°C to -45°C
External cabinet finish	steel/white
Door / lid material	steel
Internal liner material	white coated aluminium
Type of control	electronic controller
Temperature display	external digital
Power failure alarm	when mains power return
Interface / Volt-free alarm contact	RS 485 / yes
Insulation	100–100 mm
Number of baskets	0
Number of baskets, max	16
Interior light	LED
Handle	profiled aluminium
Lock	fitted
Gross / net weight	94/81 kg
Climate rating	SN
Sound power level	55 dB(A)
Refrigerant	R 290
Voltage / Connection rating	220–240V~ / 3.5 A
Accessories	
NTC product temperature probe	9590407
RS 485/RS 232 adapter, data log software	9590387
Baskets	7112947
Roller bars	9901627

* measured at +25°C ambient temperature and -45°C set temperature



LGT 3725 MediLine



LGT 2325 MediLine



365/342 litre
1373/808/919
1170/500/650
2.928 kWh

215/200 litre
1132/760/919
889/410/630
2.256 kWh

static
manual
-10°C to -45°C
steel/white
steel
white coated aluminium
electronic controller
external digital
when mains power return
RS 485/yes
100–100 mm
0
13
LED
profiled aluminium
fitted
82/71 kg
SN
55 dB(A)
R 290
220–240V~/3.0 A

static
manual
-10°C to -45°C
steel/white
steel
white coated aluminium
electronic controller
external digital
when mains power return
RS 485/yes
120–120 mm
0
10
LED
profiled aluminium
fitted
68/58 kg
SN
55 dB(A)
R 290
220–240V~/2.0 A

9590407
9590387
7112947
9901627

9590407
9590387
7112317
9901629

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



Laboratory refrigerators with mechanical control and spark-free interior	LKexv 5400 MediLine	LKexv 3600 MediLine
Total gross / net capacity	554/520 litre	333/307 litre
Exterior dimensions in mm (w/d/h)	750/730/1640	600/610/1640
Interior dimensions in mm (w/d/h)	600/560/1452	470/440/1452
Energy consumption in 24 h *	0.983 kWh	0.947 kWh
General		
Cooling system	forced-air	forced-air
Defrost	automatic	automatic
Temperature range	+1°C to +15°C	+1°C to +15°C
External cabinet finish	steel/white	steel/white
Door / lid material	steel	steel
Internal liner material	commercial grade moulded polystyrol	commercial grade moulded polystyrol
Type of control	analogue controls	analogue controls
Temperature display	external digital	external digital
Adjustable shelves	5	5
Usable shelf area in mm (w/d)	600/550	470/425
Shelf material	glass	glass
Shelf loading	40 kg	40 kg
Handle	ergonomic slimline handle	ergonomic slimline handle
Lock	fitted	fitted
Door hinges	right, reversible on site	right, reversible on site
Gross / net weight	84/77 kg	64/59 kg
Climate rating	SN-T	SN-T
Sound power level	48 dB(A)	48 dB(A)
Refrigerant	R 600a	R 600a
Voltage / Connection rating	220–240V~/1.5 A	220–240V~/1.5 A
Accessories		
Glass shelf	9293613	9293615
Castor base	9086365	9086323
Adjustable legs	9590233	9590233
Additional lock barrels (up to 10)	on request	on request

* measured at +25 °C ambient temperature and +5 °C set temperature



LKexv 2600 MediLine

LKexv 1800 MediLine

240/221 litre
600/610/1250
470/440/1062
0.786 kWh

180/160 litre
600/600/860
513/441/702
0.898 kWh

forced-air
automatic
+1°C to +15°C
steel/white
steel
commercial grade moulded polystyrol
analogue controls
external digital
4
470/425
glass
40 kg
ergonomic slimline handle
fitted
right, reversible on site
53/49 kg
SN-T
48 dB(A)
R 600a
220–240V~/1.0 A

forced-air
automatic
+1°C to +15°C
steel/white
steel
commercial grade moulded polystyrol
analogue controls
external digital
3
513/412
glass
40 kg
ergonomic slimline handle
fitted
right, reversible on site
40/38 kg
SN
44 dB(A)
R 600a
220–240V~/1.0 A

9293615
9086323
9590233
on request

9293631



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.



Accessories

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.



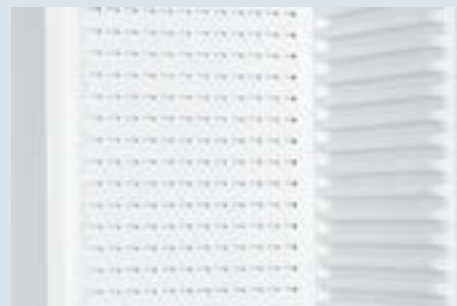
Roller sets and adjustable-height feet

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.



Accessories

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.

