

## Quality, Design and Innovation



## 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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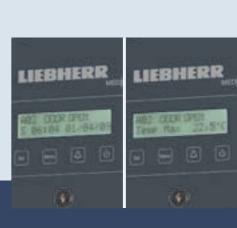
## Good reasons to choose Liebherr













#### 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.



## Quality right down to the smallest detail

The MediLine range appliances with a Profi electronic controller are equipped with many features to guarantee the safety of stored products and temperature stability in the interior. High-quality materials and precise workmanship, extremely efficient

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



#### The Profi electronic controller.

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

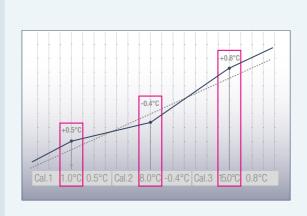


#### Integrated alarm systems.

A visual and audible door alarm alerts the user to temperature deviations. An alarm is also raised if the door is open for longer than one minute or in the event of power failure.

#### Integrated data memory.

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



#### Precision with 3-point calibration.

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





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

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

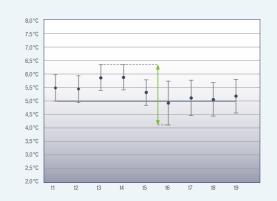
#### External temperature sensor.

The laboratory appliances have an access port (diameter 7.0 mm) in the appliance ceiling which allows a temperature sensor to be positioned in the interior.



#### External temperature and alarm documentation.

The laboratory appliances with a Profi electronic controller are equipped with a volt-free contact for alarm forwarding to an external remote warning system. The data can be read out of the internal memory and transferred to a PC via an infrared interface. In addition the appliances have an RS 485 interface which enables as many as 20 appliances to be networked with a central monitoring and alarm system.



#### Maximum temperature consistency.

Maximum temperature stability in the interior is ensured by the dynamic cooling system with double ventilation. Very short defrost cycles allow the internal temperature to be kept almost constant during the defrost phases. All laboratory appliances are designed according to the ISO 60068-3 standard with regard to maximum temperature stability and consistency.

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



**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.

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Laboratory	retrigerators and
freezers with	Profi electronic controller

freezers with Profi electronic controller
Gross 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
Interior light
Adjustable shelves
Usable shelf area in mm (w/d)
Shelf material
Shelf loading
Castors
Handle
Lock
Self-closing door
Door hinges
Gross/net weight
Climate rating
Sound power level
Refrigerant
Voltage/Connection rating
Accessories
Shelf, plastic-coated

<b>LKPv</b>	1423
Medilin	е

1430/830/2150 1250/700/1550

1427 litre

3.923 kWh

forced-air

automatic

0°C to +16°C

external digital

visual and audible

RS 485/yes

8 1250/650

60 kg

fitted

yes

284/229 kg T (5)

220-240V~/3.0 A

58 dB(A)

7112393

9001761

9001757

9590389

9590387

9590407

LKPv 1420 with solid doors

R 290

304-grade stainless steel

electronic controller with text display

immediately upon power failure for 72hrs

LED lighting, with separate switch

wire shelves plastic-coated

castors with brake at the front,

full-length integrated handle

castors at the rear

steel/white glass door

720		LFI
		-
	-	

LKPv	842	20	
MediLir	ne		

856 litre 790/980/2150

620/850/1550

2.400 kWh

forced-air

automatic

steel/white

steel

-2°C to +16°C

external digital

visual and audible

RS 485/yes

620/800

60 kg

fitted

yes

T (5)

58 dB(A)

R 290

7113643

9005067

9005069

9590389

9590387

9590407

187/154 kg

304-grade stainless steel

wire shelves plastic-coated

castors with brake at the front,

fixed castors at the rear

right, reversible on site

220-240V~/2.0 A

full-length integrated handle

electronic controller with text display

immediately upon power failure for 72hrs









601 litre
700/830/2150
520/700/1550
2.731 kWh
forced-air
automatic

0-0 10 +10-0
steel/white
glass door
304-grade stainless steel
electronic controller with text display
external digital
immediately upon power failure for 72hr
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

7112393

9001761

9001757

9590389

LED lighting, with separate switch

fitted
/es
right, reversible on site
167/141 kg
Γ (5)
58 dB(A)
R 290
220-240V~/2.0 A

#### **LKPv 6520** Mediline

601 litre
700/830/2150
520/700/1550
1 775 kWh

RS 485/yes

fitted

yes

7112393

9001761

9001757

9590389

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 72l
visual and audible

4	
520/650	
wire shelves plastic-coated	
60 kg	
castors with brake at the front,	
fixed castors at the rear	

full-length integrated handle

158/132 kg
T (5)
58 dB(A)
R 290
220-240V~/2.0 A

right, reversible on site

9590387	9590387
9590407	9590407

#### **LGPv 1420**

realline	
427 litre	
430/830/2150	

1250/700/1550

8.887 kWh

forced-air	
automatic	
-10°C to -26°C	
steel/white	

SIEEI
304-grade stainless steel
electronic controller with text display
external digital
immediately upon power failure for 72

	0
	1250/650
	wire shelves plastic-coated
	60 kg
	castors with brake at the front,
	castors at the rear

full-length integrated handle

visual and audible

RS 485/yes

fitted

9590389

9590387

9590407

262/219 kg	
T (5)	
60 dB(A)	
R 290	
220-240V~/4.5 A	

220-240V~/4.5 A
7112393
9001761
9001757

#### **LGPv 8420** Mediline

856 litre	601 litre
790/980/2150	700/830/2150
620/850/1550	520/700/1550
5.500 kWh	4.715 kWh

torced-air
automatic
-10°C to -35°C 1)
steel/white
steel
304-grade stainless steel
electronic controller with text display
external digital

RS 485/yes

620/800

60 kg

fitted

yes

T (5)

60 dB(A)

7113643

9005067

9005069

9590389

9590387

9590407

R 290

197/164 kg

wire shelves plastic-coated

castors with brake at the front,

fixed castors at the rear

right, reversible on site

220-240V~/4.0 A

full-length integrated handle

04-grade stainless steel	304-grade stainless steel
ectronic controller with text display	electronic controller with text display
kternal digital	external digital
nmediately upon power failure for 72hrs	immediately upon power failure for 72
sual and audible	visual and audible

hrs	immediately upon power failure for 72hrs
	visual and audible
	RS 485/yes
	4
	E00/0E0

520/650
wire shelves plastic-coated
60 kg
castors with brake at the front,

**LGPv 6520** 

Mediline

forced-air

automatic

steel/white

-10°C to -35°C 1)

castors with brake at the front,
fixed castors at the rear
full-length integrated handle
fitted
yes

right, reversible on s
171/143 kg
T (5)
60 dB(A)
D 000

R 290 220-240V~/4.0 A 7112393

U-shaped trayslide, right

U-shaped trayslide, left

Also available as

Infrared key incl. software

NTC product temperature probe

RS 485/RS 232 adapter, data log software

<sup>9001761</sup> 9001757 9590389 9590387 9590407

<sup>1)</sup> The temperature range is valid at a maximum ambient temperature of  $+30\,^{\circ}\text{C}$ 



## 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

(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.



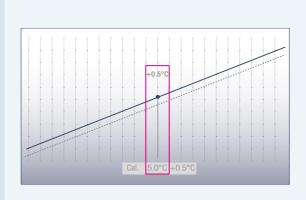
#### Certified according to ATEX 95.

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.



#### 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.



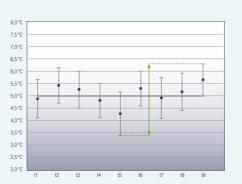
#### Integrated alarm systems.

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 dooropen 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.



#### 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  $+2\,^{\circ}\text{C}$  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  $90^{\circ}$ . 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 refrigerators and freezers with Comfort electronic controller and spark-free interior





#### **Laboratory fridge-freezer**

with Comfort electronic controller and spark-free interior

spark-tree interior	
Total gross/net capacity	fridge compartment
Total gross/net capacity	freezer compartmen
Exterior dimensions in mm (w/d/h)	n dozar domparamen
Interior dimensions in mm (w/d/h)	fridge compartment
Interior dimensions in mm (w/d/h)	freezer compartmen
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 compartmen
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)

#### LCexy 4010 Mediline

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

254/240 litre	Total gross/net capacity
107/105 litre	Exterior dimensions in mm (w/d/h)
600/615/2000	Interior dimensions in mm (w/d/h)
440/435/1105	Energy consumption in 24 h *
431/435/597	General
1.800 kWh	Cooling system/Defrost
	Temperature range
forced-air/static	External cabinet finish
automatic/manual	Door/lid material
+3°C to +16°C / -9°C to - 30°C	Internal liner material
steel/white	Type of control
steel	Temperature display
commercial grade moulded polystyrol	Power failure alarm
electronic controller	Fault: warning signal
external digital	Interface/Volt-free alarm contact
when mains power return	Adjustable shelves
visual and audible	Usable shelf area in mm (w/d)
RS 485/yes	Shelf material
4	Shelf loading
440/420	Drawers/Number of baskets
glass/glass	Compartment height in mm
40 kg/24 kg	Handle
3	Lock
ergonomic slimline handle	Self-closing door
fitted	Door hinges
yes	Gross/net weight
right, reversible on site	Climate rating
93/87 kg	Sound power level
SN-ST	Refrigerant
52 dB(A)	Voltage/Connection rating
R 600a	Accessories
220-240V~/1.5 A	Glass shelf
	Stacking kit, white
	Roller bars
9293629	Evaporator cover, white
9590145	Adjustable legs
9590387	NTC product temperature probe
on request	RS 485/RS 232 adapter, data log software
	Additional lock barrels (up to 10)

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			
electronic controller	electronic controller	electronic controller	electronic controller
external digital	external digital	external digital	external digital
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			
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

 $<sup>^\</sup>star$  measured at +25 °C ambient temperature and +5 °C set temperature for fridges and -20 °C for freezers



## 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

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



#### 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.



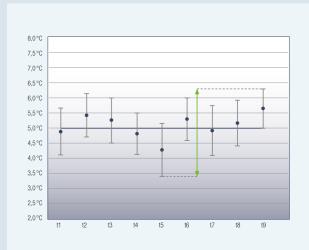
#### Integrated alarm systems.

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 dooropen alarm delay can be adjusted between 1 and 5 minutes. Additional safety is provided by a visual power failure alarm and sensor defect alarm.



#### 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.



#### Accurate 1-point calibration.

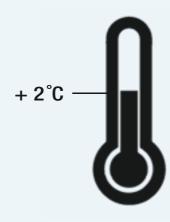
The laboratory appliances with a Comfort electronic controller are equipped with 1-point calibration for accurate temperature control. This permits compensation between the set temperature and the actual internal temperature. Positive or negative changes to the correction value can be made in steps of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

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#### 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.





	oratory refrigerators Comfort electronic controller
Total g	gross/net capacity
Exteri	or dimensions in mm (w/d/h)
Interio	or dimensions in mm (w/d/h)
Energy	y consumption in 24 h *
Gener	al
Cooling	g system
Defros	t
Tempe	rature range
Externa	al cabinet finish
Door/I	id material
Interna	ıl liner material
Type o	f control
Tempe	rature display
Power	failure alarm
Fault: \	warning signal
Interfa	ce/Volt-free alarm contact
Interior	r light
Adjusta	able shelves
Usable	shelf area in mm (w/d)
Shelf n	naterial
Shelf lo	oading
Handle	
Lock	
Self-cle	osing door
Door h	inges
Gross/	net weight
Climate	e rating
Sound	power level
Refrige	
Voltage	e/Connection rating
Acces	******
	plastic-coated
Stackir	ng kit, white
Roller I	bars
Evapor	rator cover, white
Adjusta	able legs

LKv 3913 Mediline	LKv 3910 MediLine	LKUv 1613 Mediline	LKUv 1610 MediLine
360/344 litre	360/344 litre	141 / 130 litre	141 / 130 litre
600/615/1840	600/615/1840	600/615/820	600/615/820
440/435/1635	440/435/1635	440/435/670	440/435/670
1.315 kWh	0.846 kWh	1.010 kWh	0.747 kWh
1.313 KWII	0.040 KWII	1.010 KWII	0.747 KWII
forced-air	forced-air	forced-air	forced-air
automatic	automatic	automatic	automatic
+3°C to +16°C	+3°C to +16°C	+3°C to +16°C	+3°C to +16°C
steel/white	steel/white	steel/white	steel/white
glass door	steel	glass door	steel
commercial grade moulded polystyrol			
electronic controller	electronic controller	electronic controller	electronic controller
external digital	external digital	external digital	external digital
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
LED lighting, with separate switch	1.6 1.667 366	LED lighting, with separate switch	1.0 1.007,300
5	5	3	3
440/420	440/420	440/420	440/420
wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated	wire shelves plastic-coated
45 kg	60 kg	45 kg	60 kg
ergonomic slimline handle	ergonomic slimline handle	ergonomic slimline handle	ergonomic slimline handle
fitted	fitted	fitted	fitted
yes	yes	yes	yes
right, reversible on site			
90/84 kg	71/65 kg	46/43 kg	39/37 kg
SN-ST	SN-ST	SN-ST	SN-ST
48 dB(A)	48 dB(A)	45 dB(A)	45 dB(A)
R 600a	R 600a	R 600a	R 600a
220-240V~/1.5 A	220-240V~/1.5 A	220-240V~/1.0 A	220-240V~/1.0 A
7112313	7112313	7112313	7112313
		9876687	9876687
		9590521	9590521
9590525	9590525	9590523	9590523
9590233	9590233		
9590407	9590407	9590407	9590407
9590387	9590387	9590387	9590387
on request	on request	on request	on request

Laboratory fridge-freez		LCv 40
with Comfort electronic controlle	er	Mediline
Total gross/net capacity	fridge compartment	254/240 li
Total gross/net capacity	freezer compartment	107/105 li
Exterior dimensions in mm (w/d/h)		600/615/
Interior dimensions in mm (w/d/h)	fridge compartment	440/435/
Interior dimensions in mm (w/d/h)	freezer compartment	431/435/
Energy consumption in 24 h *		1.800 kWh
General		
Cooling system	fridge/freezer comp.	forced-air/
Defrost	fridge/freezer comp.	automatic/
emperature range	fridge/freezer comp.	+3°C to +1
external cabinet finish		steel/white
Door/lid material		steel
nternal liner material		commercia
Type of control		electronic o
Temperature display		external dig
Power failure alarm		when main
-ault: warning signal		visual and a
nterface/Volt-free alarm contact		RS 485/ye
Adjustable shelves	fridge compartment	4
Jsable shelf area in mm (w/d)	fridge compartment	440/420
Shelf material	fridge/freezer comp.	wire shelve
Shelf loading	fridge/freezer comp.	45 kg/24 k
Drawers	freezer compartment	3
Handle		ergonomic
Lock		fitted
Self-closing door		yes
Door hinges		right, rever
Gross/net weight		91/85 kg
Climate rating		SN-ST
Sound power level		52 dB(A)
Refrigerant		R 600a
Voltage/Connection rating		220-240\
Accessories		
Grid shelf, plastic-coated, for	fridge compartment	7112313
Evaporator cover, white, for	fridge compartment	9590391
NTC product temperature probe	. 0	9590407
RS 485/RS 232 adapter, data log softv	vare	9590387

LCv 4010	
MediLine	
254/240 litre	
107/105 litre	
600/615/2000	
440/435/1105	
431/435/597	
1.800 kWh	
1.000 KWII	
forced-air/static	
automatic/manual	
+3°C to +16°C / -9°C to	o - 30°C
steel/white	
steel	
commercial grade mould	ded polystyrol
electronic controller	
external digital	
when mains power retur	'n
visual and audible	
RS 485/yes	
4	
440/420	
wire shelves plastic-coa	ted/glass
45 kg/24 kg	
3	
ergonomic slimline hand	lle
fitted	
yes	
right, reversible on site	
91/85 kg	
SN-ST	
52 dB(A)	
R 600a	
220-240V~/1.5 A	
7440040	
7112313	
9590391	
9590407	
9590387	
on request	

Additional lock barrels (up to 10)

NTC product temperature probe RS 485/RS 232 adapter, data log software

Additional lock barrels (up to 10)



## 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

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



#### External temperature and alarm documentation.

The laboratory chest freezers are equipped with a volt-free contact for alarm forwarding to an external remote warning system. In addition, they have an RS 485 serial interface for central documentation of the temperature profiles and alarm events.



#### The 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.



#### 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.



#### 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.

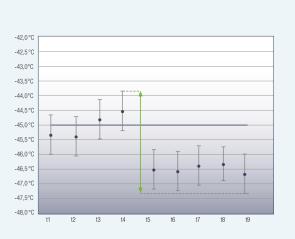
The Comfort electronic controller is equipped with an integrated data memory which logs the maximum and minimum internal temperatures as well as the last three temperature alarms and power failures, together with the time, date and duration. These data can be read out on the display.



#### 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.

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#### 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.



<b>Laboratory chest freezers</b> up to -45°C	LGT 4725 MediLine	LED	LGT 3725 Mediline	LED	LGT 2325 Mediline	LED
Total gross/net capacity	459/431 litre		365/342 litre		215/200 litre	
Exterior dimensions in mm (w/d/h)	1648/808/919		1373/808/919		1132/760/919	
Interior dimensions in mm (w/d/h)	1445/500/650		1170/500/650		889/410/630	
Energy consumption in 24 h *	4.352 kWh		2.928 kWh		2.256 kWh	
General	7.00Z NWII		2.320 KWII		2.200 KWII	
Cooling system	static		static		static	
Defrost	manual		manual		manual	
Temperature range	-10°C to -45°C		-10°C to -45°C		-10°C to -45°C	
External cabinet finish	steel/white		steel/white		steel/white	
Door/lid material	steel		steel		steel	
Internal liner material	white coated aluminium		white coated aluminium		white coated aluminium	
Type of control	electronic controller		electronic controller		electronic controller	
Temperature display	external digital		external digital		external digital	
Power failure alarm	when mains power return		when mains power return		when mains power return	
Interface / Volt-free alarm contact	RS 485/yes		RS 485/yes		RS 485/yes	
Insulation	100–100 mm		100–100 mm		120–120 mm	
Number of baskets	0		0		0	
Number of baskets, max	16		13		10	
Interior light	LED		LED		LED	
Handle	profiled aluminium		profiled aluminium		profiled aluminium	
Lock	fitted		fitted		fitted	
Gross/net weight	94/81 kg		82/71 kg		68/58 kg	
Climate rating	SN		SN		SN	
Sound power level	55 dB(A)		55 dB(A)		55 dB(A)	
Refrigerant	R 290		R 290		R 290	
Voltage/Connection rating	220-240V~/3.5 A		220-240V~/3.0 A		220-240V~/2.0 A	
voltago, cominocion rating	220 2407 70.071		220 2400 70.070		220 2400 72.071	
Accessories						
NTC product temperature probe	9590407		9590407		9590407	
RS 485/RS 232 adapter, data log software	9590387		9590387		9590387	
Baskets	7112947		7112947		7112317	
Roller bars	9901627		9901627		9901629	
Honor baro	3301021		3301021		3301023	

\* measured at +25 °C ambient temperature and -45 °C set temperature
28 29

### 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.

LKexv 5400



<b>Laboratory refrigerators</b> with mechanical control and spark-free interior	LKexv 5400 MediLine	<b>LKexv 3600</b> Mediline	LKexv 2600 Mediline	LKexv 1800 Mediline
Total gross/net capacity	554/520 litre	333/307 litre	240/221 litre	180/160 litre
Exterior dimensions in mm (w/d/h)	750/730/1640	600/610/1640	600/610/1250	600/600/860
Interior dimensions in mm (w/d/h)	600/560/1452	470/440/1452	470/440/1062	513/441/702
Energy consumption in 24 h *	0.983 kWh	0.947 kWh	0.786 kWh	0.898 kWh
General				
Cooling system	forced-air	forced-air	forced-air	forced-air
Defrost	automatic	automatic	automatic	automatic
Temperature range	+1°C to +15°C	+1°C to +15°C	+1°C to +15°C	+1°C to +15°C
External cabinet finish	steel/white	steel/white	steel/white	steel/white
Door/lid material	steel	steel	steel	steel
Internal liner material	commercial grade moulded polystyrol			
Type of control	analogue controls	analogue controls	analogue controls	analogue controls
Temperature display	external digital	external digital	external digital	external digital
Adjustable shelves	5	5	4	3
Usable shelf area in mm (w/d)	600/550	470/425	470/425	513/412
Shelf material	glass	glass	glass	glass
Shelf loading	40 kg	40 kg	40 kg	40 kg
Handle	ergonomic slimline handle	ergonomic slimline handle	ergonomic slimline handle	ergonomic slimline handle
Lock	fitted	fitted	fitted	fitted
Door hinges	right, reversible on site			
Gross/net weight	84/77 kg	64/59 kg	53/49 kg	40/38 kg
Climate rating	SN-T	SN-T	SN-T	SN
Sound power level	48 dB(A)	48 dB(A)	48 dB(A)	44 dB(A)
Refrigerant	R 600a	R 600a	R 600a	R 600a
Voltage / Connection rating	220-240V~/1.5 A	220-240V~/1.5 A	220-240V~/1.0 A	220-240V~/1.0 A
Accessories				
Glass shelf	9293613	9293615	9293615	9293631
Castor base	9086365	9086323	9086323	
Adjustable legs	9590233	9590233	9590233	
Additional lock barrels (up to 10)	on request	on request	on request	

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

32 33



#### Accessories

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

U-shaped trayslides and plastic-coated shelves

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



#### Infrared key with documentation software

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



#### Interface converter with monitoring software

A special interface converter including the Liebherr LTM monitoring software is available for central documentation of the temperature profile data and alarm events of multiple appliances via the RS 485 serial interface. It is possible to network as many as 20 laboratory appliances and centrally document their parameters. Alarm forwarding or regular status reports to up to three email addresses can be configured as an additional feature. Alternatively, commercially available converters can be used to connect the appliances to a PC via WLAN or LAN. Software requirements: PC with Windows® operating system.



#### NTC product temperature sensor

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



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

NTC spark-free product temperature sensor

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



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

#### Interface converter with monitoring software

A special interface converter including LTM monitoring software is available for central documentation of the temperature profile data and alarm events of multiple appliances via the RS 485 serial interface. Capability is provided for interconnecting as many as 20 laboratory appliances and centrally documenting their parameters. Alarm forwarding or regular status reports to up to three email addresses can be configured as an additional feature. Commercially available converters can be used to connect the connected appliances to a PC via WLAN or LAN. Software requirements: PC with Windows<sup>®</sup> 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.



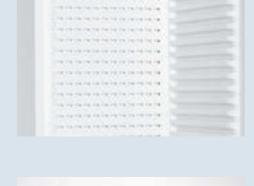
#### Evaporator cover

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



#### 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<sup>®</sup> operating system.



#### Additional lock barrels

Up to 10 additional lock barrels to protect the stored products against unauthorised access are available as accessories for the laboratory appliances with a Comfort electronic controller. In case of multiple appliances, different locks can be installed to ensure that the respective appliance can only be accessed by the staff members responsible for it.



#### Stacking kit

A stacking kit is available for combining the LKUv 1613, LKUv 1610, LKUexv 1610 and LGUex 1500 models as desired. This allows stacking a glass door appliance and solid door appliance or a refrigerator and freezer on a small footprint.



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

#### Evaporator cover

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



#### Roller sets and adjustable-height feet

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



#### Plastic-coated grid shelves

Additional plastic-coated grid shelves can be retrofitted as required to provide extra storage options. The sturdy grid shelves have an extremely high loading capacity of up to 45 kg.



#### Section: Laboratory chest freezers up to -45°C

#### NTC product temperature sensor

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



#### Interface converter with documentation software

A special interface converter including LTM documentation software is available for central documentation of the temperature profile data and alarm events of multiple appliances via the RS 485 serial interface. It is possible to network as many as 20 laboratory appliances and centrally monitor their parameters. Alarm forwarding or regular status reports to up to three email addresses can be configured as an additional feature. Commercially available converters can be used to connect the connected appliances to a PC via WLAN or LAN. Software requirements: PC with Windows<sup>®</sup> 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.



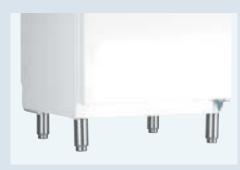
#### Castor base

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.

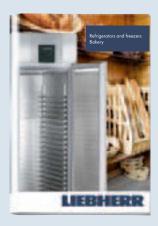


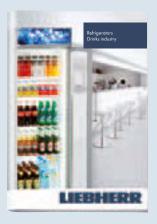
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