





## Best results without fail

Reliable refrigeration of temperature-sensitive substances poses enormous challenges for the research and healthcare sectors. To help you overcome every one of them, Liebherr offers high-quality refrigerators and freezers combined with innovative monitoring solutions and a comprehensive range of services.

For example, the network connection of refrigerators and freezers with SmartMonitoring guarantees maximum reassurance and a significant reduction in workload.

This is also ensured by our high-quality service – from planning and installation to ongoing support.

And, in terms of sustainability, we can boast more than 70 years of expertise and a passion for professional refrigeration and freezing – with unsurpassed energy efficiency, natural refrigerant and extremely long-lasting appliances.

The quality that characterises Liebherr pays off in many ways. On the following pages you can find out how research and healthcare can benefit from our complete solutions.



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If the masculine form is used in the wording, it is solely for the sake of readability and without any intention to discriminate. It is meant here as a gender-neutral term and refers to all gender identities.



Earthmoving



Mining



Concrete technology



Gear technology and automation systems



Components



notets



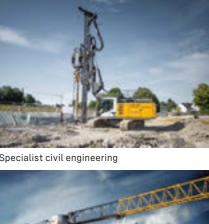
Material handling



Mobile and crawler cranes



Maritime cranes





Tower Cranes



Aerospace and transportation systems



Refrigerators and freezers

## A tradition of reliability admired the world over.

For 75 years Liebherr has offered high-quality products for pioneering industries. With our customers and partners all over the world, we constantly reach new heights.



#### One big family

The Liebherr Group was established in 1949 by Hans Liebherr. With a history spanning 75 years, the family-run company is characterised by stability and reliability. Liebherr is one of the biggest manufacturers of construction equipment and is also successful in many other industries. The Group has a decentralised organisation with more than 50,000 employees worldwide and is divided into independently operating business units.

The Group now encompasses 13 product segments – earthmoving machinery, material handling technology, deep foundation machines, mining, mobile and crawler cranes, tower cranes, concrete technology, maritime cranes, aerospace and transportation systems, gear technology and automation systems, refrigerators and freezers, components and hotels – and comprises more than 140 companies across all continents. The holding company of the Group is Liebherr-International AG in Bulle (Switzerland), all of whose shareholders are members of the Liebherr family.

## Cutting edge combined with experience: Appliances

The Appliances division was established at the Ochsenhausen site in 1954 and for many years it has played an important part in the development of the Group. For 70 years, Liebherr has been a premium manufacturer of innovative refrigerators and freezers for domestic and commercial use. With an annual production of more than 2.2 million appliances, Liebherr is one of Europe's leading suppliers of cooling and freezing appliances. The five production sites in Ochsenhausen (Germany), Lienz (Austria), Radinovo (Bulgaria), Kluang (Malaysia) and Aurangabad (India) form a manufacturing network for refrigerators and freezers that meets all the most up-to-date standards.

Liebherr is active all over the world. With a dense network of sales subsidiaries and offices in Bulgaria, Germany, the UK, Austria, Canada, Malaysia, Russia, Switzerland, Singapore, South Africa and the USA, the refrigeration and freezing specialists ensure that customers receive expert advice and that service and maintenance work is provided professionally on site.

Brand and quality

Brand and quality

## Quality is in our DNA.

Our work is driven by the high demands of our customers worldwide. For 70 years, we have been offering high-quality appliances for private and commercial use that meet these high demands, proving their durability and repaying the investment in them.

#### Specialists in refrigeration and freezing

With outstanding quality, pioneering technologies as well as aesthetic yet user-friendly design, Liebherr sets new standards again and again. How do we do it? By specialising in what we do: developing and manufacturing outstanding refrigerators and freezers, especially for professional use. Research, laboratories and medicine are just some of the areas for whose special requirements our appliances are explicitly designed – with a clear mission: to make your demanding day-to-day work easier with maximum precision and safety.







## Cleverly built for maximum safety

Sensitive samples, research materials and preparations allow no room for error with refrigeration. Reliability is crucial. And that's exactly what Liebherr stands for. Liebherr professional appliances have been specifically developed for the challenging requirements of the research, laboratory and medical sectors. With clever design details, high-quality materials and innovative technologies, they provide maximum safety and ease of use.



## The Liebherr factor:

### freezers

- Specially developed for research, laboratories an modicine
- Safe storage of sensitive substances
- Top quality thanks to elaborate testing procedures
- Complete solution in combination with SmartMonitoring and

#### Tested down to the finest detail - and beyond.

From conception through to development and production to marketing, at Liebherr we do everything we can to offer top-quality, innovative products. We test all the mechanical, electronic and refrigeration components for reliable operation, from the development stage onwards. Before we approve a door hinge, for example, it must undergo at least 100,000 opening cycles. You can count on this: your Liebherr appliance will be the professional partner at your side – 24 hours a day, 365 days a year.

Sustainability

## Complete responsibility

Responsible use of our resources is our objective and further continuous improvement throughout the product lifecycle is the long-term aim.

This is why we continually develop more environmentally friendly methods for manufacturing more sustainable products – with the familiar Liebherr quality. As well as high energy efficiency, we put a special focus on durability and ensuring that spare parts are available for at least ten years.

### Our path to the future recyclable product design more renewable materials materials able to be separated more recycled materials reuse of materials fewer environmentally harmful raw materials **Product** responsibility lower energy consumption maximum energy efficiency maximum durability more renewable energies simple repair less waste optimal storage conditions

#### Conscientiously developed

We take every aspect of sustainability into account when designing our products. Our product responsibility begins during the development of the appliances and continues with the careful organisation of our production and supply chains. This means the correct choice of materials with regard to recycling as well as minimising the use of energy during production are important factors. During the use phase our almost maintenance-free appliances are characterised by very low energy consumption and low operating costs.

#### Naturally refrigerated

We were the first to convert our complete range of refrigerators to CFC-free refrigerants and blowing agents. We now only use the natural refrigerants R600, R290 and R170. These are specially designed for highly efficient compressors and also result in lower energy consumption and electricity costs.

#### Responsibly manufactured

We handle resources responsibly and use renewable energies in the production of all of our appliances. We recycle the energy released during production, for example, to heat buildings. We also purify the water after the manufacturing process to make sure that it is free of pollutants. In addition, we are continuously reducing our waste volume by consistently separating waste and recycling production materials wherever possible.



#### **Europe-wide certification**

All our European production sites are certified according to the international standards for quality management (ISO 9001), environmental management (ISO 14001) and energy management (ISO 50001).

#### **EcoVadis Gold**

We handle the issue of Corporate Responsibility holistically and at all stages of the product life cycle. Our efforts have been awarded gold for 2023 by EcoVadis, the world's leading Corporate Social Responsibility ratings agency. We are proud to be among the top 3% of companies assessed by EcoVadis.



#### The Liebherr factor:

Environmentally conscious development and production:

- Appliances with very low energy consumptio
- · Natural refrigerant
- Resource-saving manufacturing processe
- European sites are fully certified
- Gold medal from EcoVadis

## Choose refrigeration and freezing from the professionals

Whether in biotechnology, pharmaceutical research, or in healthcare, the highly demanding work relies on refrigeration that meets the highest standards.

With specially developed professional appliances and innovative SmartMonitoring, Liebherr offers solutions for the stringent requirements of the medical and scientific sectors – and good arguments for choosing our systems expertise.

Five good reasons for our outstanding performance.

Discover all the details of SmartMonitoring starting on page 94 and find out how the digital system maximises safety and lightens your workload. Availability varies by country, please contact your Liebherr Account Manager for details.



#### Reliable temperature stability

Liebherr professional appliances are characterised by outstanding temperature stability. Sensitive vaccines, preparations, samples and medicines are cooled to precise, constant temperatures – even when there are extreme climatic conditions. In addition, SmartMonitoring controls temperature stability and sends alerts in the event of deviations.



#### Standard safety functions

Liebherr stands for maximum protection of valuable products. Numerous safety functions ensure that the quality of temperature-sensitive substances is constantly assured – as is the quality of your work. If you want maximum certainty, you can use our cloud-based SmartMonitoring solution, with instant notifications for additional peace of mind.



#### Innovative alarm systems

Research and medicine allow no room for inaccuracy – and that includes storage temperatures. Liebherr professional appliances are equipped with various alarm systems that immediately warn of any deviations and help you to realistically assess critical situations. In addition to the integrated alarm systems, SmartMonitoring also alerts you by text message, email or phone.



#### Sustainability and economy

Our refrigerators and freezers only use natural refrigerants and are characterised by high efficiency as well as very low energy and operating costs.

The outstanding TCO (total cost of ownership) is also down to the long service life, easy care and, not least, the fact that the appliances need hardly any maintenance.



#### Compliance with standards and directives

Liebherr refrigerators and freezers comply with all the various standards, norms and directives on storage quality, hygiene and safety. In addition, SmartMonitoring documents all the relevant temperature data and automatically generates reports.



## Stable temperature – constant quality

Liebherr appliances offer maximum reliability for storing sensitive substances by ensuring constant temperatures. SmartMonitoring additionally monitors the temperature stability and sends an alarm if there are any deviations. This not only maintains the correct climate for storage, but also the value of your stored products.

#### Precise temperature ranges

Temperature fluctuations must be minimal to ensure that the quality of sensitive substances is preserved. Liebherr refrigerators will not deviate from the set temperature by more than  $\pm 3$  °C, and Liebherr freezers will not stray by more than  $\pm 5$  °C. This optimally protects the quality of their valuable contents.

#### Stability is in the air.

The circulating-air refrigeration system and the optimal airflow in the interior keep the temperature stable and ensure that the set temperature is quickly restored after the door has been opened. This means frequent opening of the door during day-to-day use has little effect on temperature stability.



#### The Liebherr factor:

Consistent refrigeration for reliable storage:

- Temperature setting accurate to a tenth of a degree
- Law talaranaa far dayiatiana
- Innovative circulating-air
- Optimal airflow and circulation
- Constant monitoring of the precise
   storage temperature

### Safety as standard

When handling highly sensitive substances, safety has top priority. Whether the risk is unauthorised access or loss of quality – Liebherr protects valuable contents with numerous safety functions and optional SmartMonitoring.

#### SmartLock: the door that thinks

To prevent products from accidentally entering circulation after an interruption in the cold chain, SmartLock automatically locks the door in the event of an alarm. Only authorised people can unlock it again.

#### Self locking door: with safety hinges

To make loading, unloading and cleaning easier, the appliance door stays open if opened by more than 90°. If the opening angle is less than 90°, it closes automatically for safety.

#### Locking systems: individual and secure

Liebherr appliances can be electronically locked and unlocked using an individual PIN code and digital remote control by as many users as you like – without them having to share a key.

#### +2 °C SafetyDevice: protection from freezing

If the temperature falls below +2 °C due to a malfunction, the SafetyDevice takes control, stabilising the temperature, activating the alarm and protecting the contents from freezing.





#### SmartMonitoring: extra safety

Liebherr's digital monitoring solution checks and documents the storage temperature and alerts you immediately in the event of deviations for maximum safety in refrigeration and freezing and optimal protection for your valuable contents.

#### The Liebherr factor:

Integrated safety functions and SmartMonitoring to protect sensitive substances:

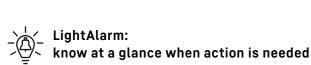
- Self-closing door at an opening angle of loss than 90°
- Automatic locking in the even
   of an alarm
- Electronic/mechanical locking system
- Protection from freezing in the event
- Monitoring, documentation and alarms when required thanks to

  SmartMonitoring

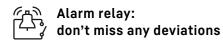
Alarms and data storage **Cost-efficiency** 

## Checks are good, but alarms are better

Professional refrigerators and freezers together with SmartMonitoring guarantee maximum storage safety through constant temperature monitoring, immediate alarms for uncontrolled fluctuations and recording of critical situations.



If there is an uncontrolled temperature rise, if a door has been left open or there are any other problems, the interior light of the appliance starts flashing. In the case of glass-door appliances, this quickly reveals where action is needed. With solid-door appliances, the flashing interior warns you to close the door immediately to preserve the storage quality.



In the event of an alarm, the responsible control centre is informed immediately, usually through connections to the building control system. You can define in advance which alarms are to be forwarded, as well as set how long forwarding remains active and whether a reminder should be sent after the alarm is acknowledged. This allows you to react immediately in critical situations.



#### Alarm history: quality check made easy

In order to be able to evaluate the quality of the stored substances, a clear history of anomalies that have occurred is necessary. The alarm history logs important data such as the date, duration and maximum temperature of the last ten, and can be accessed and reviewed from anywhere.



#### Integrated data logger: can be traced back for years

To ensure full traceability, the integrated data logger records the temperature profile, alarm history and service information for up to five years. The stored data can be read directly from the appliance via a USB interface.



#### SmartMonitoring: additional digital alarms

If there are deviations in the storage temperature, SmartMonitoring immediately alerts you by email, or by text message or phone (optional). This helps you react before problems arise. In addition, SmartMonitoring documents all relevant temperature data and automatically generates reports. For more details see page 94.

## Maximum performance at a minimal cost.

Rising costs increase the requirements that professional refrigerators and freezers must meet. Liebherr scores highly here on every level with sustainably economical appliances.



#### Ultra-efficient: good for people and the environment

Energy-efficient refrigerators and freezers help with ever increasing electricity prices. Liebherr fully utilises the savings potential of every component - from the compressor to the seal, to the lighting and electronics. The ultra-efficient appliances in the Perfection series for example demonstrates how this has a positive effect on your overall operating costs.

#### Outstanding service life: satisfaction guaranteed

Liebherr appliances are designed for a long service life. Extremely robustly manufactured, they withstand the demands of daily use. This is quality that pays off - for many years to come.

#### Almost maintenance free: saves costs, time and aggravation

Liebherr's professional freestanding appliances operate without filters or other components and parts that require regular replacement. They only need to be regularly cleaned and calibrated according to your individual needs.

#### The Liebherr factor:

Very low energy and total operating costs:



Compliance with standards and directives Compliance with standards and directives

# Meeting the highest expectations. And the applicable standards and directives.

Hardly any sector has more stringent requirements for the storage of substances than those of research, laboratories and medicine. Liebherr professional appliances are specially developed to meet these extremely strict requirements for aspects such as hygiene and occupational safety.

#### DIN 13277 compliance

Laboratory and pharmaceutical refrigerators from Liebherr meet all the necessary property and performance criteria to fully comply with DIN 13277.

#### IEC 61010-2-011 compliance

Liebherr refrigerators and freezers specially developed for storing temperature-sensitive products are CE safety-compliant. This ensures that all mechanical and electrical requirements for injury-free operation are met – and that you and your team are always kept safe.

#### ATEX compliance

Liebherr laboratory appliances conform to EN/IEC 60079-0 / EN-IEC 60079-7 and comply with EU Directive 2014/34/EU ("ATEX Directive"). With an interior classified according to <Ex> II 3 G Ex ec IIC T6 (declared as Zone 22), they are suitable for flammable substances in closed containers that could form explosive atmospheres.



#### Cleanroom compatibility

Liebherr fridges and freezers in the new scientific line have been tested for use in cleanrooms in accordance with DIN EN ISO 14644. This saves you needing to carry out an additional risk assessment.

#### Antimicrobial handle

A benefit for users but a bane for germs: The easy-turn handle mechanism makes opening the door effortless. It contains special antimicrobial substances that reduce bacteria by up to 99.99%\*. Regular and time-consuming disinfection is not necessary. This means the appliance is extremely safe even if many people have access to it.

\*According to ISO 22196:2011

### Recommended cleaning products and disinfectants

Liebherr appliances are designed for a long service life.

To maintain them, the manual or separate instructions contain recommendations for cleaning products and disinfectants that have been tested by Liebherr for safe use. This way you can be sure that you are not accidentally harming your appliance when you are trying to take care of it.

#### Easy-to-clean interior

The inner liner is made of polystyrene: a fully recyclable, robust, and odourless plastic. Manufactured seamlessly from one piece, it has no hidden dirt traps and the large, rounded corners can be cleaned quickly and easily. It's the perfect combination of sustainability and hygiene.

#### **SmartMonitoring**

The digital, cloud-based solution from Liebherr helps provide proof of compliance and full documentation of the temperature data (find out more on page 94).





#### The Liebherr factor:

Designed to meet the strictest standards, norms and directives:

- Suitable for storing sensitive substances in accordance with DIN 13277
- Safe operation in accordance with IEC 61010-2-011
- ATEX compliant for storing explosive and highly flammable substances
- Cleanroom compatible
- Hygienic and easy-to-clean design
- SmartMonitoring for reliable documentation as proof of temperature compliance



## SmartMonitoring: for maximum safety and convenience

SmartMonitoring makes reliable
Liebherr appliances even safer
and takes protection of valuable
contents to a new level. The digital,
cloud-based solution automatically
and continually monitors and
documents the storage temperature
- relieving you of a daily task that
takes time and attention.

## Discover all the details of SmartMonitoring starting on page 94 and find out how the digital solution maximises safety and lightens your workload. Availability varies by country, please contact your Liebherr Account Manager for details.



Alternatively, go to home.liebherr.com/smartmonitoring

#### **Continuous monitoring**

SmartMonitoring constantly and accurately monitors temperature stability – even outside regular working hours, such as at weekends or on public holidays. And it can even do it at different sites for multiple appliances.

#### Complete documentation

SmartMonitoring documents the temperature and all relevant refrigeration parameters for your stored substances around the clock.

#### Immediate alarms in the event of deviations

If there are deviations in the storage temperature, you are immediately alerted by email, text message or phone. This way, you can react before problems arise.

#### Simple commissioning

The new generation of research, laboratory and medical appliances are either already equipped with the SmartModule or can be retrofitted with it and immediately connected to SmartMonitoring. Predecessor models can be easily connected via the SmartCoolingHub. Find out how Liebherr Service can help you take the first steps towards maximum safety.

#### The Liebherr factor:

Maximum safety and convenience with SmartMonitoring:

- An easy, simple and convenient monitorin solution for all network-capable Liebherr appliances
- Constant monitoring of the precise storage temperature
- Frees you up from time-consuming checks and documentation
- Reliable, digital alarm system
- All relevant data visible at a glance at any time

Liebherr's service promise

## Endlessly reliable. Take our word for it.

In research, laboratories and medicine, there are ever more jobs to do, and less time to do them in. Liebherr takes some of them off you. Let us lighten your daily workload – with many different services to ensure reliable refrigeration from the professionals.

#### Delivery right to your door

Liebherr offers you various delivery options. We can deliver your new appliance to the kerbside or take it right in to the place of use and unpack it there. We'll not only take back the packaging for disposal, but also your old appliance if you want.

#### Installation: it couldn't be quicker

With our installation service, your new appliance is ready in no time to provide you with reliable refrigeration or freezing. Liebherr will not only commission the appliance for you, but also install the digital monitoring solution or other accessories. The availability varies in different countries.

#### Qualification: let the professionals help

Be on the safe side and save time as well: Liebherr will take care of the time-consuming installation qualification (IQ) and operational qualification (OQ), including the documentation and training. If you want, we can send you the documentation and you can carry out the qualification yourself.

#### Maintenance: doing it right

Liebherr appliances for research, laboratory and medicine require an impressively low amount of maintenance.

## Comprehensive solution for everyday use

Fulfils the highest standards for data protection

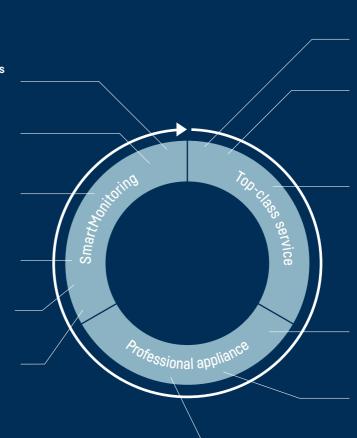
Protect your valuable substances

Reliable documentation for proof of temperature compliance

Prevention of damage and loss of quality

More time to concentrate on the essentials

Simple and convenient monitoring solution



Professional delivery service from kerbside to place of installation, including disposal of packaging and old appliances

Fast and professional customer service

Comprehensive expert support for installation qualification (IQ) and operational qualification (OQ)

Large selection of professional appliances for research, medicine and laboratories

Maximum precision and reliable temperature stability

Meets the strict DIN 13277 standard on storage of temperature-sensitive substances such as pharmaceuticals

Series Series

## Two unique series

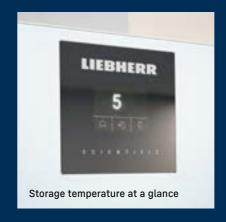
Whether it's a large research facility or a small laboratory, a doctor's surgery, a nursing home or a pharmacy – our range includes models for every requirement. But however different the appliances are, they all have one thing in common: their first-rate quality.

## Performance Perfection

#### Performance series

All the appliances in the Performance series comply with the safety standard IEC 61010-2-011. In addition, some appliances meet other standards such as the ATEX directive.





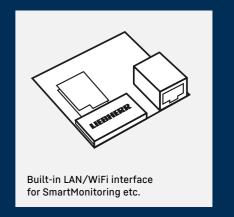






#### Perfection series

The appliances in the Perfection series not only comply with the IEC 61010-2-011 safety standard but also DIN 13277, which specifies requirements for laboratory and medical applications.



	MediLine	MediLine	MediLine
	ATEX LKexv	<b>General laboratory use</b> SUFsg	General laboratory use LKPv/LGPv
Temperature stability	Refrigerators < ± 5 K deviation from setpoint		Refrigerators < ± 3 K deviation from setpoint
		Freezers < ± 7 K deviation from setpoint	Freezers < ± 5 K deviation from setpoint
		SmartFrost	Freezers with NoFrost
		Calibration option	Calibration option
Storage safety		Visual and audible alarms	Visual and audible alarms
		Custom alarm settings possible	Custom alarm settings possible
		Alarm relay	Alarm relay
			Alarm test function
		Alarm with battery backup (72 h) immediately upon power failure	
			Alarm history with real-time clock and 6 events
		Integrated data logger	
			NTC product sensor optional
			Min./max. temperature log
			Self-closing door at < 60°
	Mechanical lock	Mechanical lock	Mechanical lock
Interfaces	_	Interfejs Ethernet	Interfejs RS485
		Modbus RTU communication protocol	Modbus RTU communication protocol
		USB interface for reading the data logger	
SmartMonitoring	_	SmartCoolingHub can be retrofitted	SmartCoolingHub can be retrofitted
Features	Rotary control with digital thermometer	LED 7-segment display with buttons	LED 7-segment display with buttons
		Maintenance timer 360 days	
		Castors as standard	Castors as standard
		3 Sensor feedthroughs	Sensor feedthrough
			Refrigerators: glass door models with ceiling lighting
			Freezers: no lighting
	Ergonomic slimline handle	Aluminum lever handle	Full-length integrated handle
Energy consumption			
Compliance	Safety according to IEC 60335-2-89	Safety according to IEC 61010-2-011	Safety according to IEC 60335-2-89
	ATEX directive		

MediLine	Performance series	Perfection series		
General laboratory use/ATEX LKUv/LKUexv/LGUex	General laboratory use/ATEX SRFvg/SFFsg/SRFfg/SFFfg/SCFfg	General laboratory use SRFvh/SFFvh/SCFvh		
Refrigerators < ± 3 K deviation from setpoint	Refrigerators < ± 3 K deviation from setpoint	Refrigerators < ± 2 K deviation from setpoint		
Freezers < ± 5 K deviation from setpoint	Freezers < ± 5 K deviation from setpoint	Freezers < ± 5 K deviation from setpoint		
	Freezers with SmartFrost	Freezers with NoFrost		
Calibration option	Calibration option	Calibration option		
Visual and audible alarms	Visual and audible alarms	Visual and audible alarms		
Custom alarm settings possible	Custom alarm settings possible	Custom alarm settings possible		
Alarm relay	Alarm relay	Alarm relay		
Alarm test function	Alarm test function	Alarm test function		
+2 °C SafetyDevice function (Refrigerators)	+2 °C SafetyDevice function (Refrigerators)	+2 °C SafetyDevice function (Refrigerators)		
	Alarm immediately upon power failure	Alarm with battery backup (12 h) immediately upon power failure		
Alarm history with real-time clock and 6 events		Alarm history with real-time clock and 10 events		
		Integrated data logger		
NTC product sensor (optional for LGUex)		PT1000 product sensor (optional for SFFvh models)		
Min./max. temperature log	Min./max. temperature log	Min./max. temperature log		
Self-closing door at < 90°	Self-closing door at < 90°	Self-closing door at < 90°		
Mechanical lock	Mechanical lock	Mechanical lock		
Interfejs RS485	Optional LAN/WiFi	Integrated LAN/WiFi		
Modbus RTU communication protocol	Local API (optional via SmartModule)	Local API		
		USB interface for reading the data logger		
SmartCoolingHub can be retrofitted	SmartModule can be retrofitted	SmartModule integrated		
LED 7-segment display with buttons	Monochrome display, touch buttons	2.4" touch & swipe colour display		
	Individually adjustable maintenance timer	Individually adjustable maintenance timer		
Castors/adjustable feet as accessories, 75 cm-wide appliances with castors as standard	Castors/adjustable feet as accessories	Castors/adjustable feet as accessories, 75 cm-wide appliances with castors as standard		
Evaporator cover (stops items freezing to inner liner), optional (except LKUexv, LGUex)	Evaporator cover (stops items freezing to inner liner), only for glass door models, optional for insulated door models (except SRFfg/SFFfg)	Evaporator cover (stops items freezing to inner liner), standard for all models (except SFFvh)		
Sensor feedthrough	Sensor feedthrough	Sensor feedthrough		
Refrigerators: glass door models with ceiling lighting	Refrigerators: glass door models with ceiling lighting	Refrigerators: Insulated and glass door models with vertical lighting		
Freezers: no lighting	Freezers: no lighting	Freezers: LED lighting in the front housing		
Ergonomic slimline handle with opening mechanism	Antimicrobial handle with opening mechanism	Antimicrobial handle with opening mechanism		
	Super-efficient	Ultra-efficient		
Safety according to IEC 60335-2-89	Safety according to IEC 61010-2-011	Safety according to IEC 61010-2-011		
ATEX directive (LKUexv, LGUex)	ATEX directive (SRFfg/SFFfg/SCFfg)	fg) Fulfils DIN 13277		



## ULT freezers – maximum safety and efficiency at ultra-low temperatures

Liebherr ultra-low temperature freezers set new standards in the temperature range from -40 °C to -86 °C. Not only do they offer unprecedented quality and reliability for storing highly sensitive substances, but also outstanding energy efficiency and ease of use that you will notice every day. Robust, economical and extremely safe, the series of appliances from the experts in freezing for laboratories and research facilities have an impressive number of functions and features.

For optimal protection of your valuable samples, chemicals and research materials. And for the satisfaction of being able to concentrate fully on your work.

## The advantages at a glance

#### SmartMonitoring

The cloud-based digital solution continuously monitors and documents temperatures and alerts you immediately via email, text message or phone if any deviations occur.

#### Stainless steel workmanship

The interior, shelves and inner doors are made of rust-proof stainless steel and are therefore easy to clean. This enables optimum hygiene.

#### **Shelves**

Three stainless steel shelves in the interior, that can be freely adjusted in 24 mm increments, offer flexibility for space-saving storage, tailored to your requirements. You can add more shelves if required

#### Serial interfaces

Interfaces for connecting to documentation and monitoring systems such as SmartMonitoring, as well as a volt-free contact for sending alarms to external remote warning systems.



#### Data recording

There are two feedthroughs (28 mm) on the top and bottom left for installing separate sensors for external monitoring or data recording systems in the interior.

#### Unloading ramp

No forklift required: the unloading ramp integrated in the packaging helps you easily position the appliance.

#### Detachable inner door

The detachable inner doors made of rust-proof stainless steel prevent loss of cold air when opening and are also easy to clean.



#### Door seals

The innovative door seal design, consisting of two all-round seals, makes the door completely airtight when closed. This also helps reduce energy consumption. The seals can be replaced separately and without tools.

#### Intuitive electronics

The intuitive electronics with integrated real-time clock allow the temperature to be set with an accuracy of one tenth of a degree. The control and display panel is resistant to dirt and easy to clean. Flexible parameter adaptations, such as offset and alarm value settings, allow the appliances to be quickly and easily adapted and qualified for your applications and requirements.



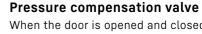
#### Monitoring system

The 3-stage monitoring system, consisting of integrated alarm notifications for temperature, door or mains electrical faults, upgradable features such as CO2 emergency refrigeration and online

monitoring, ensures optimum protection during storage. In the event of a power failure, integrated 12-volt batteries immediately supply the electronics with power. Notifications are provided in critical situations.

#### Insulation

The combination of CFC-free polyurethane foam and vacuum-insulated panels ensures the best possible insulation to prevent rapid temperature increases.



When the door is opened and closed, the air exchange creates a vacuum which makes it difficult to open the door again immediately afterwards. The heated pressure compensation valve quickly equalises the vacuum and the door can be easily opened again after just a few seconds.



In order to maintain the quality of the stored samples, it is important to minimise temperature fluctuations.

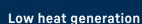
Liebherr ultra-low temperature freezers are characterised by extremely low fluctuations, both within the appliance and over time.



#### Low energy consumption

Quality right down to the smallest detail

Ultra-low temperature freezers are among the appliances with the highest energy consumption in research facilities. Liebherr ultra-low temperature freezers are some of the most economical models on the market worldwide. In combination with highly insulating vacuum panels, the efficient cooling system allows economical operation, optimum energy savings and therefore low operating costs.



The efficient cascade cooling system with HC refrigerants generates significantly less heat than previous technologies. This saves costs in the thermal design of the room's air conditioning system. If heat dissipation via the room air conditioning is not possible, water cooling is available as an option.



## Connection to documentation and monitoring systems

All the appliances have a volt-free alarm output and an Ethernet interface for remote monitoring. This means the appliances can be connected to SmartMonitoring. In addition, the temperature and alarm records can be read via the integrated USB interface. Optionally, a 4-20 mA output allows the temperature value to be integrated into existing data recording systems.



#### IQ, OQ, training

From installation qualification (IQ) to operational qualification (OQ) to training, we offer you comprehensive expert help with installation and commissioning. We carry out the various checks for you or set specific parameters for you on request. In addition, we train your staff on site in using the equipment and answer your questions. In our document folder you will also find all the important information about the devices.



## Installation service for accessories

Our qualified installation service assists you with professional installation and connection of accessories such as the analogue temperature sensor or CO<sub>2</sub> emergency refrigeration.







#### MediLine

728 / 700 litre

1204/1082/1966

890/605/1300

xterior dimensions in mm (w/d/h)
terior dimensions in mm (w/d/h)
nergy consumption in 365 days
mbient temperature range
eat output
eat output system / Refrigeration system
efrigerant
ound power level ¹
oltage / frequency
onnection rating
emperature range
xternal cabinet finish
oor material
iternal liner material
ype of control
olt-free alarm contact
martMonitoring compatible / Connectivity type
onnectivity solution / Interface
ata logger
ower failure alarm
ooling system
ull-down time +22°C to -80°C
/arm-up time -80°C to -60°C / to 0°C
umber / maximum number of storage shelves
djustable shelves
helf material
sable shelf area in mm (w / d)
helf loading / Maximum total load
umber of racks per shelf
ax. number of cryoboxes, 50 mm / 75 mm
astors
ccess ports
ype of lock / Door hinges
•

2957 kWh
+16°C to +32°C
1224 kJ/h
air cooling / 2-stage cascade system
R 290 / R 170
47 dB(A)
230V~/50 Hz
7.0 A
-40 °C to -86 °C
steel/white
steel
stainless steel
LED 7-segment display with buttons
yes
yes/SmartCoolingHub
retrofittable / LAN (Ethernet)
integrated, USB interface
immediately upon power failure for 72 hrs
static
450 min
250 min / 2220 min
4/11
3
stainless steel
860/590
50 kg / 200 kg
6
528/336
castors with brake at the front, fixed castors at the rear
3 x Ø 28 mm
mechanical/right hand hinged, not reversible
361/313 kg
see page 36
7790038
7790048
7790050
7790127
7790051
7790042
6125784



<b>30139</b>	•	001	VCI.	,	_
MediLine					

6125784

1204/1	082/1966
890/60	5/1300
2957 kW	/h
+16°C to	) +32°C
1224 kJ,	/h
water-co	ooled / 2-stage cascade system
R 290 / F	R 170
47 dB(A)	
230V~/	50 Hz
7.0 A	
-40°C to	-86°C
steel/w	hite
steel	
stainless	s steel
LED 7-se	gment display with buttons
yes	
yes/Sm	artCoolingHub
retrofitta	able / LAN (Ethernet)
integrate	ed, USB interface
immedia	tely upon power failure for 72 hrs
static	
450 min	
250 min	/ 2220 min
4/11	
3	
stainless	s steel
860/59	0
50 kg/2	00 kg
6	
528/33	6
castors v	with brake at the front, fixed castors at the real
3 x Ø 28	mm
mechani	cal/right hand hinged, not reversible
361/31	3 kg
see page	2 36
7790038	}
7790048	3
7790050	)
7790127	1
7790051	
1170031	



MediLine

491/477 litre

920/1082/1966

606/605/1300

+16 °C to +32 °C

air cooling / 2-stage cascade system

LED 7-segment display with buttons

immediately upon power failure for 72 hrs

castors with brake at the front, fixed castors at the rear

mechanical/right hand hinged, not reversible

2884 kWh

1188 kJ/h

R 290/R 170

230V~/50 Hz

-40 °C to -86 °C

stainless steel

yes/SmartCoolingHub

retrofittable / LAN (Ethernet)

integrated, USB interface

230 min / 2160 min

stainless steel

50 kg/200 kg

580/590

352/224

3 x Ø 28 mm

308/254 kg

see page 36

7790038

7790048

7790049

7790070

7790051

7790042

6125784

steel/white

47 dB(A)

7.0 A

steel

static

4/11

360 min







SUFsg 5001 ver. H72	SUFsg 350
MediLine	MediLine

MediLine 491/477 litre 920/1082/1966 606/605/1300 2884 kWh +16 °C to +32 °C 1188 kJ/h water-cooled / 2-stage cascade system R 290 / R 170 47 dB(A) 230V~/50 Hz 7.0 A -40°C to -86°C steel/white stainless steel LED 7-segment display with buttons yes/SmartCoolingHub retrofittable / LAN (Ethernet) integrated, USB interface immediately upon power failure for 72 hrs static 360 min 230 min / 2160 min 4/11 stainless steel 580/590 50 kg/200 kg 352/224 castors with brake at the front, fixed castors at the rear 3 x Ø 28 mm mechanical/right hand hinged, not reversible 308/254 kg see page 36 7790038

7790048

7790049

7790070

7790051

7790042

6125784

402/382 litre 797/1082/1966 466/605/1300 2738 kWh +16 °C to +32 °C 1116 kJ/h air cooling / 2-stage cascade system R 290 / R 170 47 dB(A) 230V~/50 Hz 7.0 A -40°C to -86°C steel/white steel stainless steel LED 7-segment display with buttons yes/SmartCoolingHub retrofittable / LAN (Ethernet) integrated, USB interface immediately upon power failure for 72 hrs static 180 min 170 min / 1300 min 4/11 stainless steel 460/590 50 kg/200 kg 264/168 castors with brake at the front, fixed castors at the rear 3 x Ø 28 mm mechanical/right hand hinged, not reversible 260/226 kg

Gross / net weight

Cryoboxes, set of 36

CO2 backup system

foamed inner doors

SmartCoolingHub

4 - 20mA analogue output

Stainless steel storage shelves

Cover for mains switch incl. key lock

Accessories Racks for cryoboxes

#### Ultra-low temperature freezers

#### Racks for cryoboxes

Convenient and temperature-resistant storage systems for well-organised sample storage. Available as aluminium or stainless steel side-access racks

for 5x4 or 6x4 50 mm boxes and as stainless steel front-access drawer racks for 5x4 or 6x4 50 mm boxes.

Maximum Loading SUFsg 5001: 8x Rack 5x4 + 8x Rack 6x4, Maximum Loading SUFsg 7001: 12x Rack 5x4 + 12x Rack 6x4, Maximum Loading SUFsg 3501: 6x Rack 5x4 + 6x Rack 6x4.



Aluminium side-access rack 5x4 779		
Aluminium side-access rack 6x4	7790014	
Aluminium side-access rack 5x4 + cryoboxes	7790015	
Aluminium side-access rack 6x4 + cryoboxes	7790025	
Stainless steel side-access rack 5x4 + cryoboxes	7790029	
Stainless steel side-access rack 6x4 + cryoboxes	7790030	

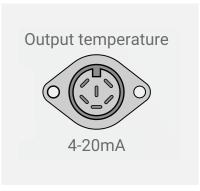
Stainless steel side-access rack 5x4	7790027
Stainless steel side-access rack 6x4	7790028
Stainless steel front-access rack 5x4 + drawers	7790031
Stainless steel front-access rack 6x4 + drawers	7790032
Stainless steel front-access rack 5x4 + cryoboxes + drawers	7790033
Stainless steel front-access rack 6x4 + cryoboxes + drawers	7790036



## Foamed inner doors The foamed inner doors provide the best possible insulation and temperature stability, ensuring efficient cooling and low power consumption.



incl. key lock
Protection against unintended
disconnection or manipulation of
the mains switch.



## **4-20mA analogue output**The 4-20mA interface displays the interior temperature as a current value, which for example can be imported into an independent system for recording or checking the internal temperature.



#### Cryoboxes

The set contains 36 durable and temperature-resistant cryoboxes made from water-repellent cardboard, with fixed 9x9 grid, for safe storage and transport of valuable samples.



#### CO<sub>2</sub> backup system

The  $CO_2$  backup system ensures that the cooling of the stored samples continues at reduced temperatures for up to 72 hours in the event of a power failure. The  $CO_2$  bottle is not part of the accessory.



## Stainless steel storage shelves

Additional robust stainless steel shelves for flexible and individual partitioning of the interior at 24 mm increments.



#### SmartCoolingHub

The SmartCoolingHub provides the basis for connecting your professional Liebherr appliances. Up to 20 network-capable Liebherr appliances can be connected via cable.



#### RS485 connection cable

The ModBUS-compatible 5-metre cable connects your appliance to the SmartCoolingHub. If you want to connect several appliances, you need an additional cable for each appliance.



## Research and laboratory appliances – for maximum precision and safety

Hardly any sector has more stringent requirements for refrigerators and freezers than those of laboratories and research. Liebherr meets them with a specifically developed range and a new generation of appliances.

Sensitive substances are reliably stored at precise temperatures and additionally protected by integrated alarm systems. Maximum efficiency ensures low consumption, while durable materials and maintenance-free components guarantee minimal operating costs. The comprehensive range is user-friendly and easy to connect in a network – such as Liebherr SmartMonitoring.

Discover typical Liebherr quality that will pay off for years and lighten your daily workload.

## The advantages at a glance

The LKPv 1420, LKPv 1423 and LGPv 1420 models can be taken apart and reassembled for easier transport. This must always be done by a trained technician. Contact Liebherr Sales for more information.

#### Integrated data memory

The minimum and maximum values can be stored for up to 41 days, and the last three power failures and temperature alarms can be recorded and retrieved.

#### **Emergency battery**

If there is a power failure, the electronics are immediately powered by an integrated 12 V battery. This means the integrated memory can carry on logging the interior temperatures without interruption for another 72 hours.



#### External temperature sensor

The laboratory appliances have a feedthrough (7.0 mm diameter) in the ceiling of the appliance for fitting a temperature sensor in the interior.

#### Stainless steel workmanship

The smooth interior made of chrome-nickel steel is easy to clean and ensures optimal hygiene.

#### Space-saving

To save space and increase the interior capacity, functional components such as fans and evaporators are located outside the refrigerator compartment.



#### Pressure compensation valve

When the door of a refrigerator or freezer is opened and closed, the exchange of air creates a vacuum that makes it difficult to open the door again immediately afterwards. The pressure compensation valve quickly equalises the vacuum so that the door can be easily opened again.

#### **SmartMonitoring**

The cloud-based digital solution continuously monitors and documents temperatures and alerts you immediately via email, text message or phone if any deviations occur.

#### Integrated alarm systems

If the door is open for longer than one minute, a visual and audible alarm is generated. The temperature and power failure alarm indicates that the temperature is too high or too low, and also warns in the event of power failures.

#### Dynamic cooling system

The dynamic cooling system with double ventilation combined with optimal airflow ensures maximum temperature stability in the interior.



#### 90° door arrester

For convenient use, the practical door remains open at 90° and is self-closing at less than 60°.

#### Castors

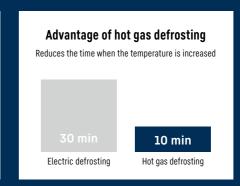
The LKPv and LGPv ranges come with castors as standard to allow versatile use according to the available space, as well as easy cleaning, even under the appliances.



## Quality right down to the smallest detail

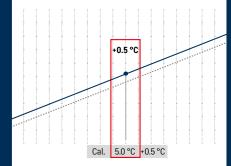
#### Maximum temperature stability

The dynamic cooling system with double ventilation ensures maximum temperature stability in the interior. Very short defrost cycles allow the interior temperature to be kept almost constant during the defrost phases. All the laboratory appliances are designed for temperature stability and consistency according to EN 60068-3.



## Energy-efficient hot gas defrosting

Timed and on-demand hot gas defrosting allows very short defrosting times. To additionally improve temperature stability during defrosting, the internal temperature is slightly lowered shortly beforehand to create a reserve of cold air.



#### Accurate 1-point calibration

The laboratory appliances with electronic controls have a 1-point calibration function for extremely accurate temperature control. This allows compensation between the set temperature and the actual interior temperature. The correction value can be adjusted in increments of 0.1 K.



#### Integrated electronics

The intuitive controller with integrated real-time clock allows the temperature to be set to 1/10°C accuracy. The keypad is resistant to dirt and easy to clean – to meet the most stringent hygiene requirements of the laboratory.



## Easily accessible refrigeration components

The refrigeration components are easily accessible, located in the upper part of the machinery compartment to significantly increase the capacity of the interior. The front can be easily lifted up to facilitate cleaning or servicing. When opened by more than 45° it can be completely detached.



## External temperature and alarm documentation

The laboratory appliances are equipped with an RS 485 serial interface – which means that up to 20 appliances can be connected via the SmartCoolingHub to a network and the SmartMonitoring system, or used with an external documentation and alarm system. The appliances also have a volt-free contact to relay alarms to an external remote warning system.





L	K	P۷	1	4	2	3
---	---	----	---	---	---	---

MediLine 1397 / 980 litre

9901947

Gross / net capacity
Exterior dimensions in mm (w/d/h)
Interior dimensions in mm (w/d/h)
Energy consumption in 365 days <sup>1</sup>
Ambient temperature range
Heat output
Refrigerant
Sound power level
Voltage / frequency
Connection rating
Cooling system / Defrost
Temperature range
Gradient <sup>2</sup> /max. fluctuation <sup>3</sup>
External cabinet finish
Door material
Internal liner material
Type of control
Power failure alarm
Fault: warning signal
Volt-free alarm contact
SmartMonitoring compatible / Connectivity type
Connectivity solution
Interface
Interior light
Adjustable shelves
Shelf material
Usable shelf area in mm (w / d)
Shelf loading
Castors
Handle
Access ports
Type of lock
Door hinges
Gross / net weight
Accessories
Grey grid shelf
U-shaped trayslide, right
U-shaped trayslide, left
Foot pedal opener
SmartCoolingHub
Product temperature sensor

Side-by-Side set in white

44

#### **LKPv 1420**

MediLine

1397 / 980 litre	1366/980 litre
1430/830/2160	1430/830/2160
1236/650/1500	1236/650/1550
820 kWh	714 kWh
+10°C to +40°C	+10 °C to +40 °C
515 kJ/h	471 kJ/h
R 290	R 290
58 dB(A)	58 dB(A)
220 - 240V~ / 50 Hz	220 - 240V~ / 50 Hz
4.0 A	4.0 A
forced-air / automatic	forced-air / automatic
0°C to +16°C	-2°C to +16°C
3.8°C/3.9°C	3.6°C/2.9°C
steel/white	steel/white
glass door	steel
Chrome-nickel steel (1.4301 / AISI 304)	Chrome-nickel steel (1.4301 / AISI 304)
LED 7-segment display with buttons	LED 7-segment display with buttons
immediately upon power failure for 72 hrs	immediately upon power failure for 72 hrs
visual and audible	visual and audible
yes	yes
yes / SmartCoolingHub	yes/SmartCoolingHub
retrofittable	retrofittable
RS485	RS485
LED ceiling light strip with separate switch	
8	8
wire shelves plastic-coated	wire shelves plastic-coated
530/640	530/640
60 kg	60 kg
castors with brake at the front,	castors with brake at the front,
castors at the rear	castors at the rear
full-length integrated handle	full-length integrated handle
1 x Ø 7 mm	1 x Ø 7 mm
mechanical	mechanical
left hand / right hand	left hand / right hand
267 / 224 kg	249 / 206 kg
7112393	7112393
9001761	9001761
9001757	9001757
9590639	9590639
6125784	6125784
9590407	9590407
/3/040/	/3/070/

9901947



#### LKPv 8420 **LKPv 6523**

MediLine
855 / 629 litre
790/980/2160
620/850/1550
603 kWh
+10 °C to +40 °C
430 kJ/h
R 290
58 dB(A)
220 - 240V~ / 50 Hz
4.0 A
forced-air/automatic
-2°C to +16°C
2.1°C/1.8°C
steel/white
steel
Chrome-nickel steel (1.4301 / AISI 304)
LED 7-segment display with buttons
immediately upon power failure for 72 hrs
visual and audible
yes
yes/SmartCoolingHub
retrofittable
RS485
4
wire shelves plastic-coated
620/800
60 kg
castors with brake at the front,
fixed castors at the rear
full-length integrated handle
1 x Ø 7 mm
mechanical
right, reversible on site
175 / 145 kg
7113643
9005089
9005077
9590659
6125784

9590407

9901947



#### **LKPv 6520** ediLine

1ediLine	MediLine
17/430 litre	602/430 litre
00/830/2160	700/830/2160
33/650/1500	533/650/1550
71 kWh	497 kWh
10 °C to +40 °C	+10°C to +40°C
45 kJ/h	300 kJ/h
290	R 290
8 dB(A)	58 dB(A)
20 - 240V~ / 50 Hz	220 - 240V~ / 50 Hz
0 A	4.0 A
orced-air/automatic	forced-air/automatic
°C to +16 °C	-2°C to +16°C
0°C/1.6°C	1.8°C/1.0°C
teel/white	steel/white
lass door	steel
hrome-nickel steel (1.4301 / AISI 304)	Chrome-nickel steel (1.43)
ED 7-segment display with buttons	LED 7-segment display with
nmediately upon power failure for 72 hrs	immediately upon power f
sual and audible	visual and audible
es	yes
es / SmartCoolingHub	yes / SmartCoolingHub
etrofittable	retrofittable
S485	RS485
ED ceiling light strip with separate switch	
	4
ire shelves plastic-coated	wire shelves plastic-coate
30/650	530/650
D kg	60 kg
astors with brake at the front,	castors with brake at the f
xed castors at the rear	fixed castors at the rear
ıll-length integrated handle	full-length integrated han
x Ø 7 mm	1 x Ø 7 mm
echanical	mechanical
ght, reversible on site	right, reversible on site
64/138 kg	154/128 kg
112393	7112393
001761	9001761
001757	9001757
590659	9590659



**LKPv 6527** MediLine

	MediLine
	598 / 429 litre
	700/830/2160
	533/650/1550
	688 kWh
	+10 °C to +40 °C
	345 kJ/h
	R 290
	58 dB(A)
	220 - 240V~ / 50 Hz
	4.0 A
	forced-air/automatic
	-2 °C to +16 °C
	1.8°C/1.0°C
	steel/white
	steel
301 / AISI 304)	Chrome-nickel steel (1.4301 / AISI 304)
ith buttons	LED 7-segment display with buttons
failure for 72 hrs	immediately upon power failure for 72 hrs
	visual and audible
	yes
	yes / SmartCoolingHub
	retrofittable
	RS485
	4
ed	wire shelves plastic-coated
	530/650
	60 kg
front,	castors with brake at the front,
	fixed castors at the rear
ndle	full-length integrated handle
	1 x Ø 7 mm
	mechanical
	right, reversible on site
	155/130 kg

7112393

9001761

9001757

9590659

6125784

9590407

6125784

9590407

9901947

1 Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers.
2 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

6125784

9590407





Gross / net capacity

**Heat output** 

Refrigerant

Sound power level

Voltage / frequency

Cooling system / Defrost

Gradient 3 / max. fluctuation 4

**Connection rating** 

Temperature range

External cabinet finish

Internal liner material

Power failure alarm

Fault: warning signal

Connectivity type

Interface

Connectivity solution

Adjustable shelves

Shelf material

Shelf loading

Access ports

Type of lock

Door hinges

Accessories

Grey grid shelf

Foot pedal opener

SmartCoolingHub

Gross / net weight

U-shaped trayslide, right

U-shaped trayslide, left

Product temperature sensor

Side-by-Side set in white

Castors

Handle

Volt-free alarm contact

SmartMonitoring compatible

Usable shelf area in mm (w / d)

Door material

Type of control

Exterior dimensions in mm (w/d/h)

Interior dimensions in mm (w/d/h)

Energy consumption in 365 days <sup>1</sup>

Ambient temperature range

602/430 litre	598
700/830/2160	700
533/650/1550	533

700/830 533/650 1367 kWh +10°C to +40°C 1190 kJ/h R 290 60 dB(A) 220 - 240V~/50 Hz 4.0 A forced-air/automatic -9°C to -35°C 2 2.9°C/3.6°C steel/white

Chrome-nickel steel (1.4301 / AISI 304) LED 7-segment display with buttons immediately upon power failure for 72 hrs

SmartCoolingHub

visual and audible

retrofittable RS485

wire shelves plastic-coated

530/650 60 kg

castors with brake at the front, fixed castors at the rear

full-length integrated handle 1 x Ø 7 mm

mechanical right, reversible on site

162/136 kg

9590407

9901947

7112393 9001761 9001757 9590659

6125784

**LGPv 6527** MediLine 98 / 429 litre

700/830/2160
533/650/1550
2019 kWh
+10°C to +40°C
1190 kJ/h
R 290
60 dB(A)
220 – 240V~ / 50 Hz
4.0 A
forced-air/automatic
-9°C to -35°C <sup>2</sup>
2.9°C/3.6°C
steel/white
steel
Chrome-nickel steel (1.4301 / AISI 304)
LED 7-segment display with buttons
immediately upon power failure for 72 hrs
visual and audible
yes
yes
SmartCoolingHub
retrofittable
RS485
4
wire shelves plastic-coated
530/650
60 kg
castors with brake at the front, fixed castors at the rear
full-length integrated handle
1 x Ø 7 mm
mechanical
right, reversible on site

160/134 kg

7112393

9001761

9001757

9590659

6125784

9590407



855/629 litre

790/980/2160

620/850/1550

+10°C to +40°C

1739 kWh

#### **LGPv 1420**

MediLine

Gross / net capacity	1366/980 litre	
Exterior dimensions in mm (w/d/h)	1430/830/2160	
Interior dimensions in mm (w/d/h)	1236/650/1550	
Energy consumption in 365 days <sup>1</sup>	2654 kWh	
Ambient temperature range	+10°C to +40°C	
Heat output	1984 kJ/h	
Refrigerant	R 290	
Sound power level	60 dB(A)	
Voltage / frequency	220 - 240V~ / 50 Hz	
Connection rating	4.0 A	

forced-air/automatic -9°C to -26°C 4.3°C/6.7°C steel/white

Chrome-nickel steel (1.4301 / AISI 304) LED 7-segment display with buttons

immediately upon power failure for 72 hrs visual and audible

SmartCoolingHub retrofittable

RS485

wire shelves plastic-coated 530/640

60 kg

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

1 x Ø 7 mm mechanical

9590407

9901947

left hand / right hand 254/209 kg

Gross / net weight Accessories

Grey grid shelf 7112393 U-shaped trayslide, right 9001761 9001757 U-shaped trayslide, left 9590639 Foot pedal opener SmartCoolingHub 6125784

9005077

9590659

6125784

9590407

9901947

1875 kJ/h R 290 60 dB(A) 220 - 240V~ / 50 Hz 4.0 A forced-air/automatic -9°C to -35°C 2 4.5°C/5.7°C steel/white Chrome-nickel steel (1.4301 / AISI 304) LED 7-segment display with buttons immediately upon power failure for 72 hrs visual and audible yes yes SmartCoolingHub retrofittable RS485 wire shelves plastic-coated 620/800 60 kg castors with brake at the front, fixed castors at the rear full-length integrated handle 1 x Ø 7 mm mechanical right, reversible on site 182/150 kg 7113643 9005089

> 1 Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers. 2 The temperature range is valid at a maximum ambient temperature of +30°C
> 3 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements,

increased by their expanded uncertainty, throughout the duration. 4 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

46

Cooling system / Defrost

Gradient 3 / max. fluctuation 4

Temperature range

External cabinet finish

Internal liner material

Power failure alarm Fault: warning signal

Volt-free alarm contact

Connectivity type

Interface

Connectivity solution

Adjustable shelves

Shelf material

Shelf loading

Access ports

Type of lock

Door hinges

**Castors** 

Handle

SmartMonitoring compatible

Usable shelf area in mm (w / d)

Product temperature sensor

Side-by-Side set in white

Door material

Type of control



The new generation of appliances for laboratories and research – safety redefined

Constant temperatures are essential when storing sensitive substances. This especially applies to work in laboratories, where even the slightest deviations can jeopardise the quality of research results. This is why Liebherr has developed new refrigerators and freezers specifically for this sector, combining maximum refrigeration performance with optimum temperature stability. Innovative safety features with monitoring and alarm functions offer all-round protection from all kinds of incident and malfunction.

The next generation of appliances also set new standards in terms of energy efficiency and total cost of ownership. On the next few pages we present the latest results of research and development by the refrigeration specialists at Liebherr and show how they can benefit safety in your laboratory.

## The advantages at a glance

#### Integrated data logger

The integrated logger records the temperature profile, alarm history and service information for up to five years. The data can be read out directly from the appliance via the USB interface.

#### Mechanical lock

Liebherr professional appliances are equipped with a mechanical lock and two keys. This ensures that unauthorised persons cannot access your valuable and sensitive stored goods.

#### Min./max. temperature log

The min./max. temperature log stores the minimum and maximum interior temperatures and shows on the display whether the storage temperatures were within the tolerance limits.

#### +2 °C SafetyDevice

If the temperature falls below +2 °C due to a malfunction, the SafetyDevice takes control, stabilising the temperature, activating the alarm and protecting the contents from freezing.

#### Power failure alarm

If a malfunction occurs, an integrated battery provides a visual and audible alarm and takes over the power supply. As soon as the power is restored, the time of failure and the maximum temperature reached are displayed.

#### LightAlarm

In the event of an uncontrolled temperature rise or other problems, the interior light of the appliance starts flashing. This visually shows when action is needed.

#### Feedthrough for external sensors

An integrated opening allows a separate sensor to be connected for additional temperature monitoring without having to drill holes

#### SmartMonitoring

The cloud-based digital solution continuously monitors and documents temperatures and alerts you immediately via email, text message or phone if any deviations occur.

#### Integrated WiFi/LAN interface

The integrated WiFi/LAN interface enables you to easily connect your appliances with Liebherr SmartMonitoring or existing local systems.

#### Easy-to-clean interior

The inner liner made of fully recyclable, robust and odourless polystyrene is manufactured in one piece without joints. This makes it quick and easy to clean the large, rounded corners.

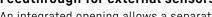
#### Replaceable door seal

Save time and money: the insertable Liebherr door seals are easy to change. If a seal is damaged, you can replace it yourself without any tools. Contact Liebherr Customer Service to purchase



#### Self-closing door < 90°

To make loading, unloading and cleaning easier, the appliance door stays open if opened by more than 90°. If the opening angle is less than 90°, it closes automatically for safety.



or break the door seal.

SRFvh 4011 Perfection

## LIEBHERR Vertical LED lighting Vertical LED lighting provides optimal illumination of the interior over the entire height of the appliance. Thanks to the perfect overview on all levels, the required substance is immediately at hand, the door can be quickly closed again, and the interior temperature remains stable. This saves you time looking for things - and above all energy costs.

## Quality right down to the smallest detail



## Antimicrobial handle with opening mechanism

A benefit for users but a bane for germs: The easy-turn handle mechanism makes opening the door effortless. It contains special antimicrobial substances that reduce bacteria by up to 99.99%\*. Regular and time-consuming disinfection is not necessary. This means the appliance is extremely safe even if many people have access to it. \*According to ISO 22196:2011



#### Grid shelf with pull-out stop

Corrosion-free grid shelves made of coated steel guarantee a secure hold, constant air circulation and good temperature stability. A pull-out stop prevents them from accidentally sliding out.



#### Ultra-efficient

Energy-efficient refrigerators and freezers help with ever increasing electricity prices. Liebherr fully utilises the savings potential of every component – from the compressor to the seal, to the lighting and electronics. The ultra-efficient ppliances in the Perfection series for example demonstrates how this has a positive effect on your overall operating costs.



#### ±3 °C temperature stability

Temperature fluctuations must be minimal to ensure that the quality of sensitive substances is preserved.

Liebherr Laboratory refrigerators have an impressive maximum deviation of just ±3 °C from the set temperature.

This not only maintains the storage climate, but also the value of your stored goods.



#### DIN 13277 compliance

Laboratory and pharmacy refrigerators from Liebherr meet all the necessary equipment and performance criteria to fully comply with DIN 13277. DIN 13277 defines the requirements and test specifications for refrigerators and freezers used in laboratories and for storing medicinal products.



#### IEC 61010-2-011

Liebherr refrigerators and freezers specially developed for storing temperature-sensitive products are CE safety-compliant. This ensures that all mechanical and electrical requirements for injury-free operation are met – and that you and your team are always safe.



#### **SRFvh 5511**

Perfection

360 kWh

475 kJ/h

R 600a

49 dB(A)

2.0 A/190 W

+3°C to +16°C

3.3°C/2.0°C

steel/white

visual and audible

yes/SmartModule

separate switch

60 kg/300 kg

1 x Ø 10 mm

600/536

588 / 440 litre

747/769/1793

606/536/1460

+10°C to +35°C

220 - 240V~/50 Hz

forced-air/automatic

commercial grade moulded polystyrol

immediately upon power failure for at least 12 hrs

vertical LED light strip recessed in left wall with

castors with brake at the front, fixed castors at the rear

antimicrobial handle with opening mechanism

2.4" touch & swipe colour display

integrated, removable / WiFi/LAN

5/wire shelves plastic-coated

integrated, USB interface

Exterior dimensions in mm (w/d/h)	
nterior dimensions in mm (w/d/h)	
Energy consumption in 365 days <sup>1</sup>	
Ambient temperature range	
Heat output	
Refrigerant	
Sound power level	
Voltage / frequency	
Connection rating / Rated consumption watts	
Cooling system / Defrost	
Temperature range	
Gradient <sup>2</sup> / max. fluctuation <sup>3</sup>	
External cabinet finish	
Door material	
Internal liner material	
Type of control	
Power failure alarm	
Fault: warning signal	
Volt-free alarm contact	
SmartMonitoring compatible / Connectivity typ	е
Connectivity solution / Interface	
Data logger	
Interior light	
Adjustable shelves / Shelf material	
Usable shelf area in mm (w / d)	
Shelf loading / Maximum total load	

	,
Type of lock / Door hinges	mechanical/right, reversible on site
Gross / net weight	111/98 kg
Accessories	
White grid shelf	7113310
White base grid	7113314
Glass shelf	9291929
Scanner rail	7435210
Castors Ø 80 mm	9086926
Adjustable feet, 90 - 120 mm / 150 - 180 mm	9080022/9086924
Additional lock barrels (up to 5)	on request
Side-by-Side set in white	9017739



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Dorfootio	•

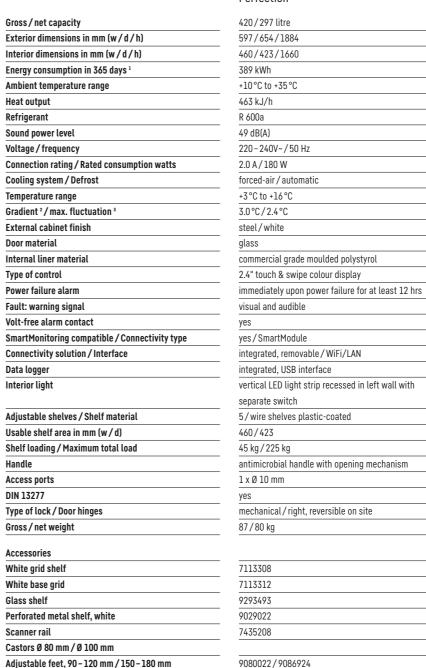
558,	/441 litre
747,	/769/1793
606	/536/1460
171	kWh
+10°	°C to +35 °C
246	kJ/h
R 60	Oa
49 d	B(A)
220-	-240V~/50 Hz
2.0 A	A/190 W
force	ed-air/automatic
+3°C	C to +16 °C
2.2°	C/1.7°C
steel	l/white
steel	l
comi	mercial grade moulded polystyrol
2.4"	touch & swipe colour display
imm	ediately upon power failure for at least 12 hrs
visua	al and audible
yes	
yes/	'SmartModule
integ	grated, removable / WiFi/LAN
integ	grated, USB interface
LED	lighting column, left
5/w	ire shelves plastic-coated
600,	/536
60 k	g/300 kg
cast	ors with brake at the front, fixed castors at the rea
antir	nicrobial handle with opening mechanism
1 x Ø	0 10 mm
yes	
mecl	hanical/right, reversible on site
94/	80 kg
7113	3310
7113	3314
9291	929
7435	5210
9086	5926
	0022/9086924

9017739



#### SRFvh 4011

Perfection





SRFvh 4001

394 / 298 litre	
597/654/1884	
460/423/1660	
172 kWh	
+10°C to +35°C	
250 kJ/h	
R 600a	
49 dB(A)	
220 - 240V~ / 50 Hz	
2.0 A / 180 W	
forced-air/automatic	
+3°C to +16°C	
2.4°C/2.2°C	
steel/white	
steel	
commercial grade moulded polystyrol	
2.4" touch & swipe colour display	
mmediately upon power failure for at least 12	hrs
visual and audible	
yes	
yes/SmartModule	
ntegrated, removable / WiFi/LAN	
integrated, USB interface	
ED lighting column, left	
5 / wire shelves plastic-coated	
460 / 423	
45 kg / 225 kg	
antimicrobial handle with opening mechanism	
1 x Ø 10 mm	
yes	
mechanical/right, reversible on site	
71 / 65 kg	
7113308	
7113312	
9293493	
9029022 7435208	

9080022/9086924

on request

9006786

on request

9006786

Additional lock barrels (up to 5)

Side-by-Side set in white

**Castors** 

Handle

Access ports

DIN 13277

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

<sup>2</sup> Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.

3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.





#### **SRFvg 5511** Performance

588 / 440 litre 747/769/1684 606/536/1442 433 kWh

+10°C to +35°C 542 kJ/h R 600a

49 dB(A) 220 - 240V~ / 50 Hz

2.0 A / 135 W forced-air/automatic

+3°C to +16°C 3.8°C/3.2°C

steel/white

commercial grade moulded polystyrol monochrome display, touch buttons

when mains power return visual and audible

yes/SmartModule

retrofittable / WiFi/LAN (optional) LED ceiling light strip with separate switch 5/wire shelves plastic-coated

600/536 60 kg/300 kg

antimicrobial handle with opening mechanism

1 x Ø 10 mm

7113314/9291929

9086926/9080023

9080022/9086924

7113310

7435210

on request

9017739

6145269

right, reversible on site 105/96 kg

Accessories

Gross / net weight

Gross / net capacity

**Heat output** Refrigerant

Sound power level

Voltage / frequency

Temperature range

External cabinet finish

Internal liner material

Power failure alarm

Fault: warning signal

Volt-free alarm contact

Connectivity solution / Interface

Adjustable shelves / Shelf material

Usable shelf area in mm (w / d) Shelf loading / Maximum total load

Door material

Type of control

Interior light

Handle

**Access ports** 

Type of lock

Door hinges

Cooling system / Defrost

Gradient 2 / max. fluctuation

Exterior dimensions in mm (w/d/h)

Interior dimensions in mm (w/d/h

Connection rating / Rated consumption watts

SmartMonitoring compatible / Connectivity type

Energy consumption in 365 days <sup>3</sup>

Ambient temperature range

White grid shelf White base grid / Glass shelf Perforated metal shelf, white

Scanner rail

Castors Ø 80 mm / Ø 100 mm

Adjustable feet, 90 - 120 mm / 150 - 180 mm

**Evaporator cover** 

Additional lock barrels (up to 5) Side-by-Side set in white

**SmartModule** 



558/441 litre 747/769/1684 606/536/1460 250 kWh +10°C to +35°C 317 kJ/h R 600a 49 dB(A) 220 - 240V~ / 50 Hz 2.0 A/140 W forced-air/automatic +3°C to +16°C 3.9°C/3.0°C steel/white commercial grade moulded polystyrol monochrome display, touch buttons when mains power return visual and audible

> yes/SmartModule retrofittable/WiFi/LAN (optional) 5/wire shelves plastic-coated

600/536 60 kg/300 kg antimicrobial handle with opening mechanism 1 x Ø 10 mm mechanical right, reversible on site 86/80 kg

7113310

7113314/9291929 7435210 9086926/9080023 9080022/9086924 9803590 on request 9017739 6145269



#### **SRFvg 4011** Performance

420 / 297 litre 597/654/1884 460/423/1642 431 kWh +10 °C to +35 °C 542 kJ/h R 600a 49 dB(A) 220-240V~/50 Hz

2.0 A / 135 W forced-air/automatic +3°C to +16°C

5.4°C/3.4°C steel/white

glass commercial grade moulded polystyrol monochrome display, touch buttons

when mains power return visual and audible

yes yes/SmartModule

retrofittable / WiFi/LAN (optional) LED ceiling light strip with separate switch 5 / wire shelves plastic-coated

460/423 45 kg / 225 kg antimicrobial handle with opening

mechanism 1 x Ø 10 mm

mechanical right, reversible on site 88/82 kg

7113308 7113312/9293493 9029022 7435208

9080022/9086924 on request 9006786

6145269





#### **SRFvg 3511** Performance

367 / 260 litre

**SRFvg 4001** 

Performance

394/298 litre

597/654/1884

460/423/1660

+10°C to +35°C

220 - 240V~ / 50 Hz

forced-air/automatic

when mains power return

retrofittable / WiFi/LAN (optional)

5 / wire shelves plastic-coated

antimicrobial handle with opening

visual and audible

yes / SmartModule

yes

460/423

45 kg / 225 kg

mechanism

1 x Ø 10 mm

mechanical

70/64 kg

right, reversible on site

245 kWh

321 kJ/h

R 600a

49 dB(A)

2.0 A / 140 W

+3°C to +16°C

4.6°C/2.2°C

steel/white

597/654/1684 460/423/1442 393 kWh +10 °C to +35 °C 471 kJ/h R 600a 48 dB(A) 220 - 240V~ / 50 Hz 2.0 A / 135 W forced-air/automatic +3°C to +16°C 3.6°C/3.2°C steel/white commercial grade moulded polystyrol commercial grade moulded polystyrol monochrome display, touch buttons monochrome display, touch buttons

> yes yes/SmartModule retrofittable / WiFi/LAN (optional) LED ceiling light strip with separate switch 4/wire shelves plastic-coated

when mains power return

visual and audible

45 kg / 180 kg antimicrobial handle with opening mechanism 1 x Ø 10 mm mechanical

81/76 kg

right, reversible on site

460/423

7113308 7113312/9293493 9029022 7435208 9086926/9080023 9080022/9086924

on request 9017739 6145269



**SRFvg 3501** Performance

344/261 litre 597/654/1684 460/423/1460 226 kWh +10 °C to +35 °C 288 kJ/h R 600a 48 dB(A) 220 - 240V~ / 50 Hz 2.0 A / 120 W forced-air/automatic +3°C to +16°C 5.0°C/3.1°C steel/white commercial grade moulded polystyrol monochrome display, touch buttons when mains power return visual and audible yes / SmartModule retrofittable / WiFi/LAN (optional) 4/wire shelves plastic-coated 460/423

45 kg / 180 kg

mechanism

1 x Ø 10 mm

mechanical

right, reversible on site

antimicrobial handle with opening

64/60 kg 7113308 7113312/9293493 9029022 7435208 9086926/9080023 9080022/9086924 9803586 on request 9017739 6145269

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

<sup>2</sup> Gradient as defined in EN 60068-3; the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration, 3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

## Quality right down to the smallest detail



#### LED front lighting

The LED front lighting provides optimal illumination of the drawers even in dark environments. Thanks to the perfect overview, the desired substance is immediately at hand, the door can be quickly closed again, and the interior temperature remains stable. For low consumption and lower energy costs.



#### NoFrost technology

Liebherr professional laboratory appliances no longer need manual defrosting. Any moisture that occurs is bound by the fan-assisted cooling, and when necessary, defrosting phases remove any remaining moisture particles from of the interior - for convenient, safe, and ice-free storage.



Side-by-Side set in white Product sensor (PT 1000)

#### **Ultra-efficient**

Energy-efficient refrigerators and freezers help with ever increasing electricity prices. Liebherr fully utilises the savings potential of every component - from the compressor to the seal, to the lighting and electronics. The ultra-efficient ppliances in the Perfection series for example demonstrates how this has a positive effect on your overall operating



#### ±5 °C temperature stability

Sensitive substances cannot be subjected to large deviations from the set storage temperature. Liebherr freezers guarantee a temperature fluctuation of no more than ±5 °C, so that the valuable goods you store in them are optimally protected and their quality is preserved.



#### DIN 13277 compliance

Laboratory and pharmacy refrigerators from Liebherr meet all the necessary equipment and performance criteria to fully comply with DIN 13277. DIN 13277 defines the requirements and test specifications for refrigerators and freezers used in laboratories and for storing medicinal products.



#### IEC 61010-2-011

Liebherr refrigerators and freezers specially developed for storing temperature-sensitive products are CE safety-compliant. This ensures that all mechanical and electrical requirements for injury-free operation are met - and that you and your team are always safe.



#### **SFFvh 5501**

	Perfection		
	. 311001011		
Gross / net capacity	472 / 257 litre		
Exterior dimensions in mm (w/d/h)	747/769/1793		
Interior dimensions in mm (w/d/h)	603/510/1118		
Energy consumption in 365 days <sup>1</sup>	540 kWh		
Ambient temperature range	+10°C to +35°C		
Heat output	725 kJ/h		
Refrigerant	R 290		
Sound power level	55 dB(A)		
Voltage / frequency	220 - 240V~/50 Hz		
Connection rating / Rated consumption watts	2.0 A / 250 W		
Cooling system / Defrost	forced-air/automatic		
Temperature range	-9 °C to -35 °C ²		
Gradient <sup>3</sup> / max. fluctuation <sup>4</sup>	5.5°C/4.4°C		
External cabinet finish	steel/white		
Door material	steel		
Internal liner material	commercial grade moulded polystyrol		
Type of control	2.4" touch & swipe colour display		
Power failure alarm	immediately upon power failure for at least 12 hrs		
Fault: warning signal	visual and audible		
Volt-free alarm contact	yes		
SmartMonitoring compatible / Connectivity type	yes/SmartModule		
Connectivity solution / Interface	integrated, removable / WiFi/LAN		
Data logger	integrated, USB interface		
Interior light	LED		
Adjustable shelves / Shelf material	4/wire shelves plastic-coated		
Usable shelf area in mm (w / d)	600/510		
Shelf loading / Maximum total load	60 kg / 300 kg		
Castors	castors with brake at the front, fixed castors at the rear		
Drawers / Number of baskets included	6/2		
Handle	antimicrobial handle with opening mechanism		
Access ports	1 x Ø 10 mm		
DIN 13277	yes		
Type of lock / Door hinges	mechanical/right, reversible on site		
Gross / net weight	113/104 kg		
Accessories			
White grid shelf	7112590		
White base grid			
Standard full-depth basket	9141791		
Castors Ø 80 mm / Ø 100 mm	9086926/-		
Adjustable feet, 90 – 120 mm / 150 – 180 mm	9080022/9086924		
Additional lock barrels (up to 5)	on request		



New

#### **SFFvh 4001**

Perfection

	273 / 174 litre
	597/654/1884
	420/400/1400
	292 kWh
	+10 °C to +35 °C
	479 kJ/h
	R 600a
	46 dB(A)
	220 - 240V~ / 50 Hz
	2.0 A / 230 W
	forced-air/automatic
	-9°C to -35°C²
	6.9°C/6.4°C
	steel/white
	steel
	commercial grade moulded polystyrol
	2.4" touch & swipe colour display
	immediately upon power failure for at least 12 hrs
	visual and audible
	yes
	yes / SmartModule
	integrated, removable / WiFi/LAN
	integrated, USB interface
	LED
	5 / wire shelves plastic-coated
	420/400
	45 kg / 315 kg
ar	
	6/-
	antimicrobial handle with opening mechanism
	1 x Ø 10 mm
	yes
	mechanical / right, reversible on site
	86/81 kg
	<u> </u>
	7113416
	7112594
	9086926/9080023
	9080022/9086924
	on request
	9006786

1 Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers.

9017739

6942678

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

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





New

Handle

Access ports

Type of lock

Door hinges

Accessories Glass shelf

Gross / net weight

Castors Ø 80 mm / Ø 100 mm

Adjustable feet, 90 - 120 mm

Adjustable feet, 150 - 180 mm

Side-by-Side set in white

SmartModule

Additional lock barrels (up to 5)

### SFFsg 5501

on request

9017739

6145269

	Performance
Gross / net capacity	499 / 394 litre
Exterior dimensions in mm (w/d/h)	747/769/1684
Interior dimensions in mm (w/d/h)	588/523/1388
Energy consumption in 365 days <sup>1</sup>	501 kWh
Ambient temperature range	+10°C to +35°C
Heat output	713 kJ/h
Refrigerant	R 290
Sound power level	49 dB(A)
Voltage / frequency	220 - 240V~ / 50 Hz
Connection rating	2.0 A
Rated consumption watts	240 W
Cooling system / Defrost	static/manual
Temperature range	-9°C to -30°C
Gradient <sup>2</sup> / max. fluctuation <sup>3</sup>	6.0°C/2.9°C
External cabinet finish	steel/white
Door material	steel
Internal liner material	commercial grade mo
Type of control	monochrome display
Power failure alarm	when mains power re
Fault: warning signal	visual and audible
Volt-free alarm contact	yes
SmartMonitoring compatible / Connectivity type	yes/SmartModule
Connectivity solution	retrofittable
Interface	WiFi/LAN (optional)
Removable shelves	4
Shelf material	wire shelves plastic-
Usable shelf area in mm (w / d)	580/523
Shelf loading / Maximum total load	60 kg/300 kg
Drawers / Number of baskets included	
Handle	antimicrobial handle
Access ports	1 x Ø 10 mm
Type of lock	mechanical
Door hinges	right, reversible on si
Gross / net weight	94/80 kg
Accessories	_
Glass shelf	9293495
Full-depth drawer	9797881
Short bottom basket / Standard full-depth basket	9141004/9141791
Castors Ø 80 mm / Ø 100 mm	9086926/9080023
Adjustable feet, 90 - 120 mm / 150 - 180 mm	9080022/9086924

Torrormanoo
499 / 394 litre
747/769/1684
588/523/1388
501 kWh
+10°C to +35°C
713 kJ/h
R 290
49 dB(A)
220 - 240V~ / 50 Hz
2.0 A
240 W
static/manual
-9°C to -30°C
6.0°C/2.9°C
steel/white
steel
commercial grade moulded polystyrol
monochrome display, touch buttons
when mains power return
visual and audible
yes
yes/SmartModule
retrofittable
WiFi/LAN (optional)
4
wire shelves plastic-coated
580 / 523
60 kg/300 kg
antimicrobial handle with opening mechanism
1 x Ø 10 mm
mechanical
right, reversible on site
94/80 kg
9293495
9797881
9141004/9141791
9086926/9080023

#### SFFsg 5501 ver. 740 Performance

499/394 litre
747/769/1684
588/523/1388
501 kWh
+10°C to +35°C
713 kJ/h
D 200

R 290 49 dB(A) 220 - 240V~ / 50 Hz 2.0 A 240 W static/manual -9°C to -30°C 6.0°C/2.9°C steel/white steel commercial grade moulded polystyrol monochrome display, touch buttons when mains power return visual and audible yes yes/SmartModule retrofittable

WiFi/LAN (optional) wire shelves plastic-coated 580/523 60 kg/300 kg 8/2 antimicrobial handle with opening mechanism

1 x Ø 10 mm

mechanical

106/80 kg

right, reversible on site

9293495

9086926/9080023 9080022/9086924 on request 9017739 6145269





Gross / net capacity	316/242 litre
Exterior dimensions in mm (w/d/h)	597/654/1884
Interior dimensions in mm (w/d/h)	403/408/1588
Energy consumption in 365 days <sup>1</sup>	385 kWh
Ambient temperature range	+10°C to +35°C
Heat output	529 kJ/h
Refrigerant	R 290
Sound power level	49 dB(A)
Voltage / frequency	220 - 240V~ / 50 Hz
Connection rating	2.0 A
Rated consumption watts	220 W
Cooling system	static
Defrost	manual
Temperature range	-9°C to -30°C
Gradient <sup>2</sup> / max. fluctuation <sup>3</sup>	5.7°C/2.5°C
External cabinet finish	steel/white
Door material	steel
Internal liner material	commercial grade moulded polystyrol
Type of control	monochrome display, touch buttons
Power failure alarm	when mains power return
Fault: warning signal	visual and audible
Volt-free alarm contact	yes
SmartMonitoring compatible / Connectivity type	yes/SmartModule
Connectivity solution	retrofittable
Interface	WiFi/LAN (optional)
Removable shelves	5
Shelf material	wire shelves plastic-coated
Usable shelf area in mm (w / d)	400 / 408
Shelf loading / Maximum total load	45 kg / 270 kg
Drawers	



New

## SFFsg 4001 ver. 740 Performance

on request

9006786

6145269

Performance	
316/190 litre	
597/654/1884	
403/408/1588	
385 kWh	
+10°C to +35°C	
529 kJ/h	
R 290	
49 dB(A)	
220 - 240V~ / 50 Hz	
2.0 A	
220 W	
static	
manual	
-9°C to -30°C	
5.7°C/2.5°C	
steel/white	
steel	
commercial grade moulded polystyrol	
monochrome display, touch buttons	
when mains power return	
visual and audible	
yes	
yes/SmartModule	
retrofittable	
WiFi/LAN (optional)	
5	
wire shelves plastic-coated	_
400/408	
45 kg / 270 kg	_
6	
antimicrobial handle with opening mechanisn	— n
1 x Ø 10 mm	
mechanical	_
right, reversible on site	
88 / 77 kg	
9293499	_
9086926/9080023	
9080022	
9086924	
on request	

1 Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers
2 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

antimicrobial handle with opening mechanism

1 x Ø 10 mm

mechanical

82/77 kg

9293499

9080022

9086924

on request

9006786

6145269

right, reversible on site

9086926/9080023

Additional lock barrels (up to 5)

Side-by-Side set in white

SmartModule







### **LKUv 1613**

м	ec	1 I	Ιır

Gross / net capacity	152 / 132 litre	
Exterior dimensions in mm (w/d/h)	601/618/820	
Interior dimensions in mm (w/d/h)	440/435/670	
Energy consumption in 365 days <sup>1</sup>	369 kWh	
Ambient temperature range	+10°C to +35°C	
Heat output	480 kJ/h	
Refrigerant	R 600a	
Sound power level	47 dB(A)	
Voltage / frequency	220 - 240V~ / 50 Hz	
Connection rating	1.0 A	
Rated consumption watts	130 W	
Cooling system	forced-air	
Defrost	automatic	
Temperature range	+3°C to +16°C	
Gradient <sup>2</sup> / max. fluctuation <sup>3</sup>	5.1°C/4.9°C	
External cabinet finish	steel/white	
Door material	glass door	
Internal liner material	commercial grade moulded polystyrol	
Type of control	LED 7-segment display with buttons	
Power failure alarm	when mains power return	
Fault: warning signal	visual and audible	
Volt-free alarm contact	yes	
SmartMonitoring compatible	yes	
Connectivity type	SmartCoolingHub	
Connectivity solution	retrofittable	
Interface	RS485	
Interior light	LED ceiling light strip with separate switch	
Adjustable shelves	3	
Shelf material	wire shelves plastic-coated	
Usable shelf area in mm (w/d)	440 / 420	
Shelf loading	45 kg	
Handle	slimline handle with integrated opening mechanism	
Access ports	1 x Ø 10 mm	
Type of lock	mechanical	
Door hinges	right, reversible on site	
Gross / net weight	45 / 43 kg	
Accessories		
White grid shelf	7113333	
Stacking kit, white	9592697	
Roller bars	9590521	
Evaporator cover, white	9590523	
SmartCoolingHub	6125784	

on request



### **LKUv 1610**

MediLine

on request

142/	133 litre
601/	618/820
440/	435/670
273 k	Wh
+10°C	C to +35 °C
200 k	J/h
R 600	a
47 dB	(A)
220 - 2	240V~/50 Hz
1.0 A	
100 W	1
forced	l-air
autom	atic
+3°C1	to +16 °C
4.3°C	/4.6°C
steel/	/white
steel	
comm	ercial grade moulded polystyrol
LED 7	-segment display with buttons
when	mains power return
visual	and audible
yes	
yes	
Smart	CoolingHub
retrofi	ittable
RS485	i
3	
wire s	helves plastic-coated
440/4	
45 kg	
slimlir	ne handle with integrated opening mechanism
1 x Ø :	10 mm
mecha	enical
right,	reversible on site
39/3	6 kg
71133	333
95926	97
95905	21
95905	23
61257	84

#### SCFvh 4032

_		
	erf	

	Perfection
Gross / net capacity fridge comp.	284/206 litre
Gross / net capacity freezer comp.	112/58 litre
Exterior dimensions in mm (w/d/h)	597/654/2044
Interior dimensions in mm (w/d/h) fridge comp.	460/423/1037
Interior dimensions in mm (w/d/h) freezer comp.	406/292/595
Energy consumption in 365 days <sup>1</sup>	409 kWh
Ambient temperature range	+10°C to +35°C
Heat output	380 kJ/h
Refrigerant	R 600a
Sound power level	48 dB(A)
Voltage / frequency	220 - 240V~/50/60 Hz
Connection rating / Rated consumption watts	2.0 A/160 W
Cooling system fridge / freezer comp.	forced-air/forced-air
Defrost fridge/freezer comp.	automatic/automatic
Temperature range fridge / freezer comp.	+3°C to +16°C / -9°C to -30°C
Gradient <sup>2</sup> fridge / freezer comp.	3.4°C/4.4°C
Max. fluctuation <sup>3</sup> fridge/freezer comp.	2.7°C/8.1°C
External cabinet finish	steel/white
Door material	glass door / steel
Internal liner material	commercial grade moulded polystyrol
Type of control	2.4" touch & swipe colour display
Power failure alarm	immediately upon power failure for at least 12 hr
Fault: warning signal / Volt-free alarm contact	visual and audible/yes
SmartMonitoring compatible / Connectivity type	yes/SmartModule
Connectivity solution / Interface	integrated, removable / WiFi/LAN
Data logger	integrated, USB interface
Interior light fridge / freezer comp.	vertical LED light strip recessed in left wall with separate s
Adjustable shelves fridge comp.	4
Shelf material fridge / freezer comp.	wire shelves plastic-coated / glass
Usable shelf area in mm (w / d) fridge comp.	460 / 423
Shelf loading fridge / freezer comp.	45 kg / 40 kg
Maximum total load	345 kg
Drawers freezer comp.	3
Handle	antimicrobial handle with opening mechanism
Access ports / DIN 13277	1 x Ø 10 mm/yes
Type of lock / Door hinges	mechanical/right, reversible on site
Gross / net weight	103/97 kg
Accessories	
White grid shelf / White base grid	7113308/7113272
Perforated metal shelf, white / Scanner rail	9029022/7435208

## SCFvh 4002 Perfection

۲	е	ľ	ı	е	С	u	υ

	272 / 206 litre
	112/58 litre
	597/654/2044
	460/423/1037
	406/292/595
	277 kWh
	+10°C to +35°C
	290 kJ/h
	R 600a
	48 dB(A)
	220-240V~/50/60 Hz
	2.0 A / 140 W
	forced-air / forced-air
	automatic / automatic
	+3°C to +16°C / -9°C to -30°C
	3.3°C/3.3°C
	3.0°C/6.4°C
	steel/white
	steel
	commercial grade moulded polystyrol
	2.4" touch & swipe colour display
hrs	immediately upon power failure for at least 12 hrs
	visual and audible / yes
	yes/SmartModule
	integrated, removable / WiFi/LAN
	integrated, USB interface
e switch/LED	LED lighting column, left/LED
	4
	wire shelves plastic-coated/glass
	460 / 423
	45 kg / 40 kg
	345 kg
	3
	antimicrobial handle with opening mechanism
	1 x Ø 10 mm/yes
	mechanical/right, reversible on site
	90 / 83 kg
	7113308/7113272
	9029022 / 7435208
	9086926/9080023
	9080022/9086924

on request / 9027388

Castors Ø 80 mm / Ø 100 mm

Adjustable feet, 90 - 120 mm / 150 - 180 mm

Additional lock barrels / Side-by-Side set in white

9080022/9086924

on request / 9027388

Additional lock barrels (up to 10)

<sup>1</sup> Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers.
2 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

#### +2 °C SafetyDevice

If the temperature falls below +2 °C due to a malfunction, the SafetyDevice takes control, stabilising the temperature, activating the alarm and protecting the contents from freezing.



#### Power failure info

The power failure info function reports when the appliance was temporarily without power and what the maximum temperature was during this time. This allows you to better assess the potential loss of quality.

#### Min./max. temperature log

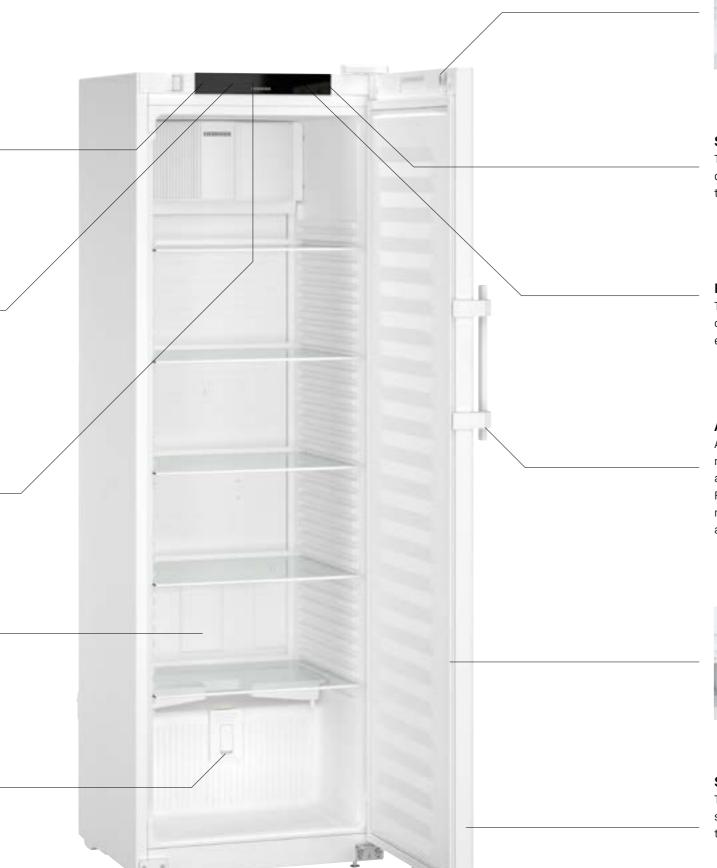
The min./max. temperature log stores the minimum and maximum interior temperatures and shows on the display whether the storage temperatures were within the tolerance limits.

#### Easy-to-clean interior

The inner liner made of fully recyclable, robust and odourless polystyrene is manufactured in one piece without joints. This makes it quick and easy to clean the large, rounded corners.

#### Feedthrough for external sensors

An integrated opening allows a separate sensor to be connected for additional temperature monitoring without having to drill holes or break the door seal.



#### Mechanical lock

Liebherr professional appliances are equipped with a mechanical lock and two keys. This ensures that unauthorised persons cannot access your valuable and sensitive stored goods.

#### **SmartMonitoring**

The cloud-based digital solution continuously monitors and documents temperatures and alerts you immediately via email, text message or phone if any deviations occur.

#### Retrofittable WiFi/LAN interface

The retrofittable WiFi/LAN interface enables you to easily connect your appliances with Liebherr SmartMonitoring or existing local systems.

#### Antimicrobial handle with opening mechanism

A benefit for users but a bane for germs: The easy-turn handle mechanism makes opening the door effortless. It contains special antimicrobial substances that reduce bacteria by up to 99.99%\*. Regular and time-consuming disinfection is not necessary. This means the appliance is extremely safe even if many people have access to it. \*According to ISO 22196:2011

#### Replaceable door seal

Save time and money: the insertable Liebherr door seals are easy to change. If a seal is damaged, you can replace it yourself without any tools. Contact Liebherr Customer Service to purchase replacements.

#### Self-closing door < 90°

To make loading, unloading and cleaning easier, the appliance door stays open if opened by more than 90°. If the opening angle is less than 90°, it closes automatically for safety.

SRFfg 4001 Performance



## Quality right down to the smallest detail



#### Explosion protection: ATEX 95

The ATEX-95 certification confirms that the Liebherr spark-free laboratory refrigerators and freezers are suitable for storing explosive and highly flammable materials as defined by EU Directive 2014/34/EU (ATEX).



#### Super-efficient

Rising electricity prices are increasing the demands on the efficiency of refrigerators and freezers. From the compressor to the seal, to the lighting and electronics, Liebherr fully utilises the savings potential of every component. The result is impressive – especially in terms of total operating costs.



#### ±3 °C temperature stability

Temperature fluctuations must be minimal to ensure that the quality of sensitive substances is preserved.

Liebherr Laboratory refrigerators have an impressive maximum deviation of just ±3 °C from the set temperature.

This not only maintains the storage climate, but also the value of your stored goods.



#### IEC 61010-2-011

Liebherr refrigerators and fraeezers specially developed for storing temperature-sensitive products are CE safety-compliant. This ensures that all mechanical and electrical requirements for injury-free operation are met – and that you and your team are always safe.



#### **SRFfg 5501**

Performance 558/441 litre

Gross / net capacity
Exterior dimensions in mm (w/d/h)
Interior dimensions in mm (w/d/h)
Energy consumption in 365 days <sup>1</sup>
Ambient temperature range
Heat output
Refrigerant
Sound power level
Voltage / frequency
Connection rating
Rated consumption watts
Cooling system / Defrost
Temperature range
Gradient <sup>2</sup> / max. fluctuation <sup>3</sup>
External cabinet finish
Door material
Internal liner material
Type of control
Power failure alarm
Fault: warning signal
Volt-free alarm contact
SmartMonitoring compatible / Connectivity type
Connectivity solution
Interface
Adjustable shelves
Shelf material
Usable shelf area in mm (w / d)
Shelf loading / Maximum total load
Handle
Access ports
ATEX conformity
Type of lock
Door hinges
Gross / net weight
Accessories
Glass shelf
Perforated metal shelf, white
Scanner rail
Castors Ø 80 mm / Ø 100 mm
Adjustable feet, 90 - 120 mm / 150 - 180 mm
Additional lock barrels (up to 5)
Side-by-Side set in white

747/769/1684
600/537/1460
399 kWh
+10°C to +35°C
408 kJ/h
R 600a
49 dB(A)
220 - 240V~ / 50 Hz
2.0 A
145 W
forced-air/automatic
+3°C to +16°C
3.7°C/3.0°C
steel/white
steel
commercial grade moulded polystyrol
monochrome display, touch buttons
when mains power return
visual and audible
yes
yes/SmartModule
retrofittable
WiFi/LAN (optional)
5
glass
600/537
40 kg/300 kg
antimicrobial handle with opening mechanism
1 x Ø 10 mm
yes
mechanical
right, reversible on site
91/80 kg
0001000
9291929
7/75010
7435210
9086926/9080023
9080022/9086924
on request
9017739
6145269



#### **SRFfg 4001**

Performance





SRFfg 3501
Performance

Pertormance
344/261 litre
597/654/1684
460/537/1460
406 kWh
+10 °C to +35 °C
388 kJ/h
R 600a
48 dB(A)
220 – 240V~ / 50 Hz
2.0 A
120 W
forced-air/automatic
+3 °C to +16 °C
3.6°C/3.1°C
steel/white
steel
commercial grade moulded polystyrol
monochrome display, touch buttons
when mains power return
visual and audible
yes
yes / SmartModule
retrofittable
WiFi/LAN (optional)
4
glass
460/537
40 kg/180 kg
antimicrobial handle with opening mechanism
1 x Ø 10 mm
yes
mechanical
right, reversible on site
68/60 kg
9293493
9029022
7435208

1 Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers.

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

3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

9086926/9080023

9080022/9086924

on request

9017739

6145269

SmartModule

## Quality right down to the smallest detail

Liebherr offers refrigerators and freezers with a spark-free interior specifically for storing explosive and highly flammable substances in laboratories and in the chemical industry. The inner liners meet the safety requirements of EU Directive 2014/34/EU (ATEX) and have been tested according to the EN 1127-1, IEC 60079-0 and IEC 60079-15 standards by electro-suisse – SEV (Swiss association for electrical and power engineering and information technology), an approved ATEX conformity evaluation organisation.



#### **SmartFrost**

Where there's no ice, there's no need to defrost: SmartFrost greatly reduces the frost build-up in the interior and on stored products. Defrosting is required less often - and when it is necessary, it is made much easier by the smooth, easy-to-clean interior walls. The evaporator is embedded in foam insulation, ensuring high energy efficiency and uniform cooling.



#### Compliance with the **ATEX Directive**

Liebherr laboratory appliances conform to EN/IEC 60079-0 / EN-IEC 60079-7 and comply with EU Directive 2014/34/ EU ("ATEX Directive"). With an interior classified according to <Ex> II 3 G Ex ec IIC T6 (declared as Zone 22), they are suitable for flammable substances in closed containers that could form explosive atmospheres.



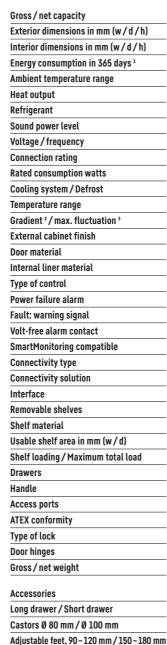
#### ±5 °C temperature stability

Sensitive substances cannot be subjected to large deviations from the set storage temperature. Liebherr freezers guarantee a temperature fluctuation of no more than ±5 °C, so that the valuable goods you store in them are optimally protected and their quality is preserved.



#### IEC 61010-2-011

Liebherr refrigerators and freezers specially developed for storing temperature-sensitive products are CE safety-compliant. This ensures that all mechanical and electrical requirements for injury-free operation are met - and that you and your team are always safe.





#### SFFfg 5501 Performance

499/394 litre 747/769/1684 588/517/1388 516 kWh

+10 °C to +35 °C 713 kJ/h R 290

5.4°C/3.3°C

steel/white

commercial grade moulded polystyrol

monochrome display, touch buttons

when mains power return

visual and audible

SmartModule

retrofittable

alass

580/517

40 kg/300 kg

1 x Ø 10 mm

mechanical

96/89 kg

9749825/

on request

9017739

6145269

right, reversible on site

WiFi/LAN (optional)

steel

yes

49 dB(A) 220-240V~/50 Hz

2.0 A 240 W

static/manual -9°C to -30°C

Additional lock barrels (up to 5)

Side-by-Side set in white

SmartModule



#### SFFfg 5501 ver. 740 Performance

New

499/394 litre 747/769/1684 588/517/1388 516 kWh +10°C to +35°C 713 kJ/h R 290 49 dB(A) 220 - 240V~ / 50 Hz 2.0 A 240 W static/manual -9°C to -30°C 5.4°C/3.3°C steel/white

commercial grade moulded polystyrol monochrome display, touch buttons when mains power return visual and audible yes SmartModule retrofittable WiFi/LAN (optional)

antimicrobial handle with opening mechanism antimicrobial handle with opening mechanism 1 x Ø 10 mm

glass

580/517

40 kg/300 kg

right, reversible on site 106/89 kg

9086926/9080023 9086926/9080023 9080022/9086924 9080022/9086924 on request 9017739 6145269



#### **SFFfg 4001** Performance

316/242 litre 597/654/1884 403/402/1588 384 kWh +10°C to +35°C 529 kJ/h R 290 49 dB(A) 220 - 240V~ / 50 Hz 2.0 A 220 W static/manual -9°C to -30°C 5.2°C/2.4°C

steel commercial grade moulded polystyrol monochrome display, touch buttons when mains power return visual and audible yes

SmartModule retrofittable WiFi/LAN (optional) alass

steel/white

400/402 40 kg / 270 kg

antimicrobial handle with opening mechanism 1 x Ø 10 mm

> right, reversible on site 83/76 kg

9749823/9749844 9086926/9080023 9080022/9086924 on request 9006786 6145269



### SFFfg 4001 ver. 740

316	5/190 litre
597	7/654/1884
403	3/402/1588
384	kWh
+10	)°C to +35°C
529	kJ/h
R 2	90
49	dB(A)
220	)-240V~/50 Hz
2.0	A
220	) W
sta	tic/manual
_	°C to -30 °C
5.2	°C/2.4°C
ste	el/white
ste	el
con	nmercial grade moulded polystyrol
mo	nochrome display, touch buttons
wh	en mains power return
visi	ual and audible
yes	
yes	
Sm	artModule
reti	rofittable
Wil	Fi/LAN (optional)
5	
gla	SS
-	)/402
40	kg / 270 kg
6	
ant	imicrobial handle with opening mechanism
_	Ø 10 mm
yes	
_	chanical
 righ	nt, reversible on site
88	/76 kg
908	36926 / 9080023
908	30022 / 9086924

on request

9006786

6145269

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

<sup>2</sup> Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration. 3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.



#### LKUexv 1610

commercial grade moulded polystyrol

slimline handle with integrated opening

LED 7-segment display with buttons when mains power return visual and audible

MediLine

200 kJ/h R 600a 47 dB(A) 220 - 240V~/50 Hz 1.0 A/100 W forced-air/automatic +3°C to +16°C 3.9°C/4.8°C steel/white

yes yes

RS485

glass 440/420

40 kg

mechanism 1 x Ø 10 mm yes

mechanical

41/38 kg

9293629

9592697

9590521

6125784

on request

right, reversible on site

SmartCoolingHub retrofittable

141/130 litre

601/618/820 440/435/670 315 kWh +10°C to +35°C

Exterior dimensions in mm (w/d/h)	
Interior dimensions in mm (w/d/h)	
Energy consumption in 365 days <sup>1</sup>	
Ambient temperature range	
Heat output	
Refrigerant	
Sound power level	
Voltage / frequency	
Connection rating / Rated consumption wat	ts
Cooling system / Defrost	
Temperature range	
Gradient <sup>2</sup> / max. fluctuation <sup>3</sup>	
External cabinet finish	
Door material	
Internal liner material	
Type of control	
Power failure alarm	
Fault: warning signal	
Volt-free alarm contact	
SmartMonitoring compatible	
Connectivity type	
Connectivity solution	
Interface	
Adjustable shelves	
Shelf material	
Usable shelf area in mm (w / d)	
Shelf loading	
Drawers / Number of baskets included	
Compartment height in mm	
Handle	
Access ports	
ATEX conformity	
Type of lock	
Door hinges	
Gross / net weight	
Accessories	
NOUCO3011C3	



#### **LGUex 1500** MediLine

139/1291

6125784

on request

139 / 129 litre	180 / 160 litre
601/618/820	600/600/860
454/450/663	513/441/702
294 kWh	328 kWh
+10 °C to +35 °C	+10°C to +30°C
330 kJ/h	421 kJ/h
R 600a	R 600a
45 dB(A)	47 dB(A)
220 – 240V~ / 50 Hz	220 - 240V~ / 50 Hz
1.0 A / 75 W	1.0 A/110 W
static/manual	forced-air/automatic
-9°C to -26°C	+1°C to +15°C
6.6°C/3.3°C	10.2°C/7.4°C
steel/white	steel/white
steel	steel
commercial grade moulded polystyrol	commercial grade moulded polystyrol
LED 7-segment display with buttons	rotary control
when mains power return	
visual and audible	
yes	
yes	
SmartCoolingHub	
retrofittable	
RS485	
	3
evaporator plates	glass
470 / 450	510/412
24 kg	40 kg
3/1	
1×149	
slimline handle with integrated opening	ergonomic slimline handle
mechanism	
1 x Ø 10 mm	
yes	yes
mechanical	mechanical
right, reversible on site	right, reversible on site
43 / 42 kg	41/38 kg
	9293631
9592697	-
9590521	-

#### **LKexv 1800** MediLine

1 TOGIZITIO	
180 / 160 litre	
600/600/860	
513/441/702	
328 kWh	
+10°C to +30°C	
421 kJ/h	
R 600a	
47 dB(A)	
220 - 240V~ / 50 Hz	
1.0 A/110 W	
forced-air / automatic	
+1°C to +15°C	
10.2°C/7.4°C	
steel/white	
steel	
commercial grade moulded polystyrol	
rotary control	
3	
glass	
510/412	
40 kg	
ergonomic slimline handle	
yes machanical	
mechanical	
right, reversible on site	
41/38 kg	
.2, 009	
9293631	

## SCFfg 4002 Performance

		Performance
Gross / net capacity	fridge compartment	267/199 litre
Gross / net capacity	freezer compartment	110 / 62 litre
Exterior dimensions in mm (w/d/h)		597 / 654 / 2044
Interior dimensions in mm (w/d/h)	fridge compartment	460/422/1037
Interior dimensions in mm (w/d/h)	freezer compartment	406/292/614
Energy consumption in 365 days <sup>1</sup>		390 kWh
Ambient temperature range		+10°C to +35°C
Heat output		350 kJ/h
Refrigerant		R 600a
Sound power level		48 dB(A)
Voltage / frequency		220 – 240V~ / 50/60 Hz
Connection rating / Rated consumption	ı watts	2.0 A / 170 W
Cooling system	fridge / freezer comp.	forced-air/static
Defrost	fridge / freezer comp.	automatic/manual
Temperature range	fridge / freezer comp.	+3 °C to +16 °C / -9 °C to -30 °C
Gradient <sup>2</sup>	fridge / freezer comp.	4.6°C/5.6°C
Max. fluctuation <sup>3</sup>	fridge / freezer comp.	3.6°C/3.2°C
External cabinet finish		steel/white
Door material		steel
Internal liner material		commercial grade moulded polystyrol
Type of control		monochrome display, touch buttons
Power failure alarm		when mains power return
Fault: warning signal / Volt-free alarm contact		visual and audible/yes
SmartMonitoring compatible / Connectivity type		yes/SmartModule
Connectivity solution		retrofittable
Interface		WiFi/LAN (optional)
Adjustable shelves	fridge compartment	4
Shelf material	fridge / freezer comp.	glass/glass
Usable shelf area in mm (w/d)	fridge compartment	460 / 422
Shelf loading	fridge / freezer comp.	40 kg / 40 kg
Maximum total load		345 kg
Drawers	freezer compartment	3
Handle		antimicrobial handle with opening mechanism
Access ports		1 x Ø 10 mm
ATEX conformity		<u>yes</u>
Type of lock / Door hinges		mechanical/right, reversible on site
Gross / net weight		89/83 kg
Accessories		
Glass shelf		9293493
Castors Ø 80 mm / Ø 100 mm		9086926 / 9080023
Adjustable feet, 90 - 120 mm / 150 - 18	0 mm	9080022/9086924
Additional lock barrels / Side-by-Side s	set in white	on request / 9027388
SmartModule		6145269

Glass shelf

Stacking kit, white Roller bars

SmartCoolingHub

Additional lock barrels (up to 10)

<sup>1</sup> Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers.
2 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

**Accessories Accessories** 

#### Laboratory refrigerators and freezers with stainless steel inner liner



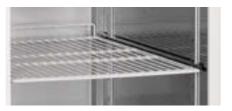
#### Side-by-side set white

Using the side-by-side set, two appliances can be placed next to each other. The required gap between the appliances is maintained, and they are neatly connected by the cover strip. This ensures tidy installation and avoids any condensation or water between the appliances.



#### U-shaped trayslides

Additional U-shaped trayslides can be retrofitted as required to provide extra storage options.



#### Grid shelf grey

If you need more storage space or want to separate stored products and have a better overview, Liebherr appliances can be equipped with additional grid shelves. Made of metal with a polypropylene coating, they are identical to the ones that come as standard in the appliances and you benefit from the same corrosion-resistant and durable extra shelving.





#### SmartCoolingHub

The SmartCoolingHub provides the basis for connecting your professional Liebherr appliances. Up to 20 network-capable Liebherr appliances can be connected via cable.



Laboratory refrigerators and freezers and laboratory fridge-freezer combination with plastic inner liner

#### Product temperature sensor

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



#### Special locking

To protect the stored products from unwanted access, special locks are available as accessories for the refrigerators and freezers. This way, different locks can be installed on several appliances to so that only the people responsible for a particular appliance have access to it.



#### Product temperature sensor

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



#### Foot-pedal door opener

The optional foot-pedal opener is useful when you don't have a hand free.



#### SmartCoolingHub

The SmartCoolingHub provides the basis for connecting your professional Liebherr appliances. Up to 20 network-capable Liebherr appliances can be connected via cable.



#### Stacking Kit

The stacking kit can be used to combine two refrigerators or refrigerators and freezers. This way, different temperature zones are available on a small surface area.



#### Evaporator cover

To better protect temperature-sensitive goods and prevent them from touching the refrigeration system, a protective plate can be retrofitted in the interior. This prevents direct contact with the refrigeration components so that the goods can be safely stored in the intended area.



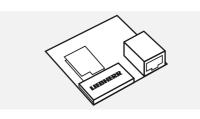
#### Roller bars and height-adjustable feet

The sturdy castors to facilitate transport and allow cleaning underneath and behind the appliance. Two roller sets including mounting accessories are supplied. The height-adjustable feet create the necessary clearance for easy cleaning under the appliance. With an individually adjustable height of 90 to 120 mm, they perfectly compensate for any unevenness on the floor.



#### Grid shelf white

If you need more storage space or want to separate stored products and have a better overview, Liebherr appliances can be equipped with additional grid shelves. Made of metal with a polypropylene coating, they are identical to the ones that come as standard in the appliances and you benefit from the same corrosion-resistant and durable extra shelving.



#### SmartModule

SmartModule connects refrigerators and freezers in a network with Liebherr SmartMonitoring and allows you to use its extensive digital monitoring and documentation functions. In addition, appliances can be integrated into a customer's existing monitoring system via a local API. The small electronic unit with integrated LAN/WiFi is ready to use as soon as it is mounted on the back of the appliance.



#### Long drawer

Always keep a good overview of your stored products with this sturdy plastic drawer. With its ergonomic handle, the drawer is very easy for you to open, day in, day out.

74

Accessories

#### Laboratory refrigerators and freezers and laboratory fridge-freezer combination with plastic inner liner

#### Glass shelf

Additional shelves made of high-quality safety glass not only the increase storage space but also make it easier to see the goods. They are ideal for storing smaller containers or materials. In addition, the shatterproof glass shelves are quick and easy to clean.



#### Side-by-side set white

Using the side-by-side set, two appliances can be placed next to each other. The required gap between the appliances is maintained, and they are neatly connected by the cover strip. This ensures tidy installation and avoids any condensation or water between the appliances.



#### Perforated metal shelf white

To ensure that even small items are stored stably in the refrigeration appliances, Liebherr has developed shallow perforated metal shelves especially for this purpose. They are made of coated metal and designed for a maximum load of up to 45 kg. The perforation ensures unhindered air circulation throughout the storage space.

#### Laboratory refrigerators and freezers and laboratory fridge-freezer combination with spark-free interior



#### Stacking Kit

The stacking kit can be used to combine two refrigerators or refrigerators and freezers. This way, different temperature zones are available on a small surface area.



#### Roller bars

The sturdy castors within the roller bars to facilitate transport and allow cleaning underneath and behind the appliance. Two roller sets including mounting accessories are supplied.



#### Height-adjustable feet

The height-adjustable feet create the necessary clearance for easy cleaning under the appliance. With an individually adjustable height of 90 to 120 mm, they perfectly compensate for any unevenness on the floor.



#### Flexible scanner rail

Scanner rails provide a perfect overview of the materials stored in the refrigerator. Thanks to their flexibility, they can be easily attached to the front of the grid shelves. With correspondingly marked paper cards, they make it easy to sort and find stored products.



#### Base grid

With the sturdy base grid, you can also make the most of the appliance floor. The grid has an abrasion-resistant coating and protects the inner liner from scratches and other damage.



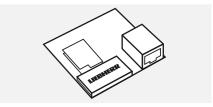
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#### Laboratory refrigerators and freezers and laboratory fridge-freezer combination with spark-free interior



#### SmartCoolingHub

The SmartCoolingHub provides the basis for connecting your professional Liebherr appliances. Up to 20 network-capable Liebherr appliances can be connected via cable.



#### Special locking

To protect the stored products from unwanted access, special locks are available as accessories for the refrigerators and freezers. This way, different locks can be installed on several appliances to so that only the people responsible for a particular appliance have access to it.



#### Glass shelf

Additional shelves made of high-quality safety glass not only increase storage space but also make it easier to see the goods. They are ideal for storing smaller containers or materials. In addition, the shatterproof glass shelves are quick and easy to clean.



#### Long drawer

Always keep a good overview of your stored products with this sturdy plastic drawer. With its ergonomic handle, the drawer is very easy for you to open, day in, day out.



#### Side-by-side set white

Using the side-by-side set, two appliances can be placed next to each other. The required gap between the appliances is maintained, and they are neatly connected by the cover strip. This ensures tidy installation and avoids any condensation or water between the appliances.



#### Castors

The sturdy castors facilitate transport and allow quick cleaning underneath and behind the appliance. A total of four castors including mounting accessories are supplied. Two of the castors also have a locking brake.



# Pharmaceutical refrigerators – medical refrigeration solutions with maximum safety

Temperature-sensitive medicines, vaccines and samples must be stored in the most reliable conditions. To be available whenever they are needed, they must be stored round the clock in maximum safety.

Liebherr pharmaceutical refrigerators compliant with DIN 13277 have been specially designed for these particular requirements. With their dynamic cooling system, highly effective insulation and precise temperature control, they guarantee absolutely reliable storage of sensitive substances and preparations. Visual and audible alarm systems provide additional safety.

The combination of maximum temperature stability, energy efficiency, robustness and ease of use lightens your daily workload – and saves you money in the long term because of the extremely low energy and operating costs.

## Pharmaceutical refrigerators



MediLine



Perfection series

	MediLine	Perfection series	
	<b>Pharmaceutical storage</b> MKUv	Pharmaceutical storage HMFvh	
Temperature stability	Refrigerators +/-3 K deviation from setpoint	Refrigerators +/-2 K deviation from setpoint (model version H63 +/-3 K)	
	Calibration option	Calibration option	
Storage safety	Visual and audible alarms	Visual and audible alarms	
	Alarm relay	Alarm relay	
	Alarm test function	Alarm test function	
	+2 °C SafetyDevice function	+2 °C SafetyDevice function	
	Alarm with battery backup (12 h) immediately upon power failure	Alarm with battery backup (12 h) immediately upon power failure	
	Alarm history with real-time clock and 6 events	Alarm history with real-time clock and 10 events	
		Integrated data logger	
	NTC product sensor	PT1000 product sensor	
	Min./max. temperature log	Min./max. temperature log	
	Fulfils DIN 13277	Fulfils DIN 13277	
	Self-closing door at < 90°	Self-closing door at < 90°	
	Custom alarm settings possible	Custom alarm settings possible	
	Mechanical lock	Electronic lock	
Interfaces	RS485 interface	Integrated LAN/WiFi	
	Modbus RTU communication protocol	Local API	
		USB interface for reading the data logger	
SmartMonitoring	SmartCoolingHub can be retrofitted	SmartModule integrated	
Features	LED 7-segment display with buttons	2.4" touch & swipe colour display	
		Individually adjustable maintenance timer	
	Castors/adjustable feet as accessories, 75 cm wide appliances with castors as standard	Castors/adjustable feet as accessories, 75 cm wide appliances with castors as standard	
	Evaporator cover (stops items freezing to inner liner)	Evaporator cover (stops items freezing to inner liner)	
	Sensor feedthrough	Sensor feedthrough	
	Glass door models with ceiling lighting	Insulated and glass door models with vertical lighting	
	Ergonomic slimline handle with opening mechanism	Antimicrobial handle with opening mechanism	
Energy consumption		Ultra-efficient	
Compliance	Safety according to IEC 60335-2-89	Safety according to IEC 61010-2-011	

## The advantages at a glance

## Integrated data logger

alarm history and service information for up to five years. The data can be read out directly from the appliance via

#### +2 °C SafetyDevice

If the temperature falls below +2 °C due to a malfunction, the SafetyDevice takes control, stabilising the temperature, activating the alarm and protecting the contents from freezing.

#### Power failure alarm

If a malfunction occurs, an integrated battery provides a visual and audible alarm and takes over the power supply. As soon as the power is restored, the time of failure and the maximum temperature reached are displayed.



#### **Vertical LED lighting**

Vertical LED lighting provides optimal illumination of the interior over the entire height of the appliance. This not only saves you time looking for things, but, above all, cuts energy costs.

#### LightAlarm

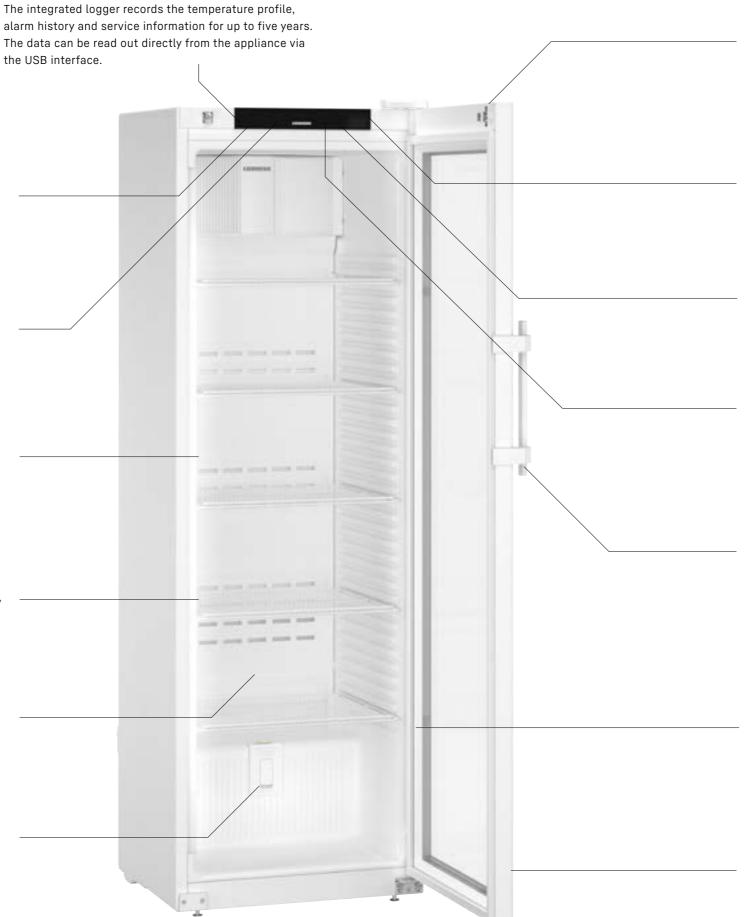
In the event of an uncontrolled temperature rise or other problems, the interior light of the appliance starts flashing. This quickly shows when action is needed.

#### Easy-to-clean interior

The inner liner made of fully recyclable, robust and odourless polystyrene is manufactured in one piece without joints. This makes it quick and easy to clean the large, rounded corners.

#### Feedthrough for external sensors

An integrated opening allows a separate sensor to be connected for additional temperature monitoring without having to drill holes or break the door seal.



#### **SmartLock**

To prevent products from accidentally entering circulation after an interruption in the cold chain, SmartLock automatically locks the door if there is an alarm. Only authorised persons can unlock it again.

#### **SmartMonitoring**

The cloud-based digital solution continuously monitors and documents temperatures and alerts you immediately via email, text message or phone if any deviations occur.

#### Integrated WiFi/LAN interface

The integrated WiFi/LAN interface enables you to easily connect your appliances with Liebherr SmartMonitoring or existing local systems.

#### Min./max. temperature log

The min./max. temperature log stores the minimum and maximum interior temperatures and shows on the display whether the storage temperatures were within the tolerance limits.

#### Antimicrobial handle with opening mechanism

A benefit for users but a bane for germs: The easy-turn handle mechanism makes opening the door effortless. It contains special antimicrobial substances that reduce bacteria by up to 99.99%\*. Regular and time-consuming disinfection is not necessary. This means the appliance is extremely safe even if many people have access to it. \*According to ISO 22196:2011



#### Replaceable door seal

Save time and money: the insertable Liebherr door seals are easy to change. If a seal is damaged, you can replace it yourself without any tools. Contact Liebherr Customer Service to purchase replacements.

#### Self-closing door < 90°

To make loading, unloading and cleaning easier, the appliance door stays open if opened by more than 90°. If the opening angle is less than 90°, it closes automatically for safety.

HMFvh 4011 Perfection

## Quality right down to the smallest detail



#### **Electronic lock with remote** control

Liebherr appliances can be securely locked with a PIN code. Locking and unlocking via remote control is also possible. This allows any number of users to lock and unlock one or more appliances without having to share a key.



#### Grid shelf with pull-out stop

Stable, durable, allows air to circulate: the robust, corrosion-free wire shelves made from coated steel support even heavy goods. At the same time, they guarantee constant air circulation for temperature stability. A pull-out stop prevents the shelf from sliding out when removing items.



#### **Ultra-efficient**

Energy-efficient refrigerators and freezers help with ever increasing electricity prices. Liebherr fully utilises the savings potential of every component - from the compressor to the seal, to the lighting and electronics. The ultra-efficient ppliances in the Perfection series for example demonstrates how this has a positive effect on your overall operating costs.



#### ±2 °C temperature stability

Temperature fluctuations must be minimal to ensure that the quality of sensitive substances is preserved. Liebherr Pharmaceutical refrigerators have an impressive maximum deviation of just ±2 °C from the set temperature. This not only maintains the storage climate, but also the value of your stored goods. (Model version H63 with temperature stability +/-3 K).



#### DIN 13277 compliance

Laboratory and pharmacy refrigerators from Liebherr meet all the necessary equipment and performance criteria to fully comply with DIN 13277. DIN 13277 defines the requirements and test specifications for refrigerators and freezers used in laboratories and for storing medicinal products.



#### IEC 61010-2-011

Liebherr refrigerators and freezers specially developed for storing temperature-sensitive products are CE safety-compliant. This ensures that all mechanical and electrical requirements for injury-free operation are met – and that you and your team are always safe.



**Pharmacy drawers** 

Optimal overview, easy access, high temperature stability: the practical organisational system made of cold-conducting aluminium comes with a transparent front, perforated base, flexible dividing walls and a 3/4-extension drawer. Medicines, vaccines and other items can be quickly found - and the door closed again with minimal loss of cold air.

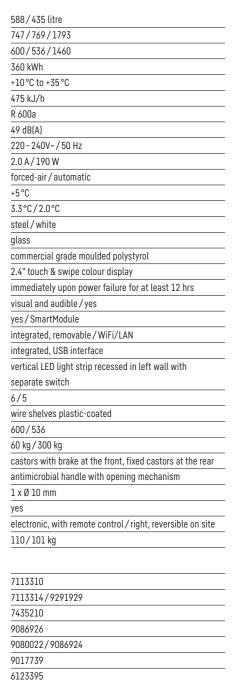


#### **HMFvh 5511**

Perfection

9086958

Gross / ne	et capacity
Exterior d	imensions in mm (w/d/h)
Interior di	imensions in mm (w/d/h)
Energy co	nsumption in 365 days ¹
Ambient t	emperature range
Heat outp	ut
Refrigera	nt
Sound pov	wer level
Voltage/	frequency
Connectio	on rating / Rated consumption watts
Cooling sy	ystem / Defrost
Temperat	ure range
Gradient <sup>2</sup>	/max. fluctuation <sup>3</sup>
External o	cabinet finish
Door mate	erial
Internal li	ner material
Type of co	ontrol
Power fail	lure alarm
Fault: war	rning signal / Volt-free alarm contact
SmartMor	nitoring compatible / Connectivity type
Connectiv	rity solution / Interface
Data logg	er
Interior li	ght
Number o	f shelves / Adjustable shelves
Shelf mat	erial
Usable sh	elf area in mm (w / d)
Shelf load	ling / Maximum total load
Castors	
Handle	
Access po	orts
DIN 13277	7
Type of lo	ck/Door hinges
Gross / ne	et weight





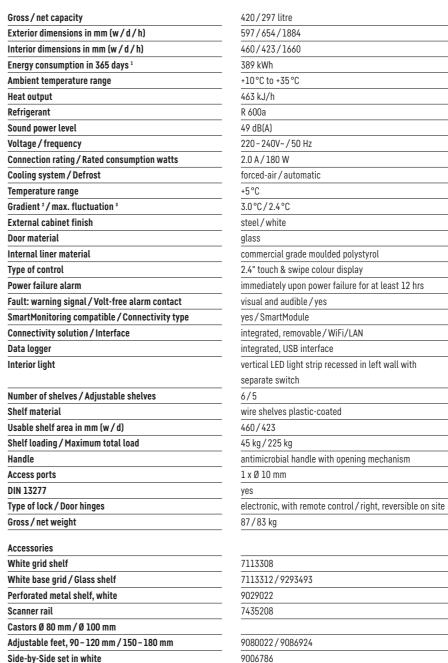
#### **HMFvh 5501** Perfection

558/436	litre
747/769	
600/536	
171 kWh	,
+10°C to	+35 °C
246 kJ/h	
R 600a	
49 dB(A)	
220 - 240	V~/50 Hz
2.0 A/19	0 W
forced-ai	r/automatic
+5°C	
2.2°C/1.	7°C
steel/wh	nite
steel	
commerc	ial grade moulded polystyrol
2.4" toucl	h & swipe colour display
immediat	ely upon power failure for at least 12 hrs
visual an	d audible / yes
yes/Sma	ırtModule
integrate	d, removable / WiFi/LAN
integrate	d, USB interface
LED lighti	ing column, left
6/5	
wire shel	ves plastic-coated
600/536	1
60 kg/30	00 kg
castors w	vith brake at the front, fixed castors at the rear
antimicro	bial handle with opening mechanism
1 x Ø 10 r	mm
yes	
electronic	c, with remote control/right, reversible on site
94/82 kg	3
7113310	
7113314	/9291929
7435210	
9086926	
9080022	/9086924
9017739	
6123395	
9086958	



### **HMFvh 4011**

Perfection



Additional remote controls

Digital input for electronic lock



394 / 295 lit	
597/654/1	1884
460/423/1	1660
172 kWh	
+10°C to +3	5°C
250 kJ/h	
R 600a	
49 dB(A)	
220 - 240V~	/50 Hz
2.0 A/180 V	V
forced-air/a	automatic
+5°C	
2.4°C/2.2°	C
steel/white	;
steel	
commercial	grade moulded polystyrol
2.4" touch &	swipe colour display
immediately	upon power failure for at least 12 hrs
visual and a	udible/yes
yes/SmartN	1odule
integrated, r	emovable/WiFi/LAN
integrated, l	JSB interface
	column, left

6/5	
wire shelves p	lastic-coated
460/423	
45 kg / 225 kg	
antimicrobial	handle with opening mechanism
1 x Ø 10 mm	
yes	
electronic, wit	h remote control/right, reversible on site
73 / 64.5 kg	

7113308 7113312/9293493 9029022 7435208 9086926/9080023 9080022/9086924 9006786 6123395 9086958

6123395

9086958

Accessories

Scanner rail

White grid shelf

Castors Ø 80 mm

White base grid / Glass shelf

Side-by-Side set in white

Additional remote controls

Digital input for electronic lock

Adjustable feet, 90 - 120 mm / 150 - 180 mm

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

<sup>2</sup> Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.

3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.



#### Vertical LED lighting

Vertical LED lighting provides optimal illumination of the interior over the entire height of the appliance. Thanks to the perfect overview on all levels, the required substance is immediately at hand, the door can be quickly closed again, and the interior temperature remains stable. This saves you time looking for things - and above all energy costs.



#### Pharmacy drawers

Optimal overview, easy access, high temperature stability: the practical organisational system made of cold-conducting aluminium comes with a transparent front, perforated base, flexible dividing walls and a ¾-extension drawer. Medicines, vaccines and other items can be quickly found - and the door closed again with minimal loss of cold air.

Gross / net capacity
Exterior dimensions in mm (w/d/h)
Interior dimensions in mm (w/d/h)
Energy consumption in 365 days <sup>1</sup>
Ambient temperature range
Heat output / Refrigerant
Sound power level
Voltage / frequency
Connection rating / Rated consumption watts
Cooling system / Defrost
Temperature range
Gradient <sup>2</sup> / max. fluctuation <sup>3</sup>
External cabinet finish
Door material
Internal liner material
Type of control
Power failure alarm
Fault: warning signal / Volt-free alarm contact
SmartMonitoring compatible / Connectivity type
Connectivity solution / Interface
Data logger
Interior light
Number of shelves / Adjustable shelves
Number of drawers
Shelf material
Usable shelf area in mm (w / d)
Shelf loading / Maximum total load
Castors
W. W.
Handle
Access ports / DIN 13277
Type of lock
Door hinges
Gross / net weight
Accessories
White grid shelf
White base grid / Glass shelf
Perforated metal shelf, white / Scanner rail
Castors Ø 80 mm / Ø 100 mm
Adjustable feet, 90 - 120 mm / 150 - 180 mm
Side-by-Side set in white
Additional remote controls / Digital input for electronic lock



#### HMFvh 5511 ver. H63 Perfection

588/361 litre

747/769/1793 556/460/1460 400 kWh +10 °C to +35 °C

475 kJ/h/R 600a 49 dB(A)

220 - 240V~/50 Hz 2.0 A / 190 W

forced-air/automatic +5°C

3.1°C/2.6°C steel/white

commercial grade moulded polystyrol 2.4" touch & swipe colour display

immediately upon power failure for at least 12 hrs

visual and audible / yes yes/SmartModule

integrated, removable / WiFi/LAN

integrated, USB interface vertical LED light strip recessed in left

wall with separate switch

1/1

wire shelves plastic-coated 550 / 460

50 kg/300 kg

castors with brake at the front, fixed castors at the rear

antimicrobial handle with opening mechanism 1 x Ø 10 mm/yes

electronic, with remote control right, reversible on site

124/116 kg

7113310 7113314/9291929 -/7435210

9086926/-

9080022/9086924 9017739

6123395/9086958



#### HMFvh 5501 ver. H63

Perfection

558/361 litre 747/769/1793 556/460/1460 179 kWh +10°C to +35°C 246 kJ/h/R 600a 49 dB(A) 220 - 240V~ / 50 Hz 2.0 A / 190 W forced-air/automatic +5°C 2.8°C/2.3°C steel/white commercial grade moulded polystyrol 2.4" touch & swipe colour display immediately upon power failure for at least 12 hrs

visual and audible / yes

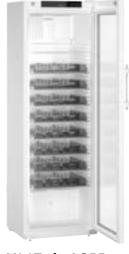
yes/SmartModule

integrated, USB interface LED lighting column, left 1/1 wire shelves plastic-coated 550/460 50 kg/300 kg castors with brake at the front, fixed castors at the rear

integrated, removable / WiFi/LAN

antimicrobial handle with opening mechanism 1 x Ø 10 mm/yes electronic, with remote control right, reversible on site 108/120 kg

7113310 7113314/9291929 -/7435210 9086926/-9080022/9086924 9017739 6123395/9086958



#### **HMFvh 4011** ver. H63 Perfection

420 / 239 litre 597/654/1884 406/370/1660 409 kWh +10 °C to +35 °C 463 kJ/h/R 600a 49 dB(A) 220 - 240V~ / 50 Hz 2.0 A / 180 W forced-air/automatic +5°C 4.1°C/2.2°C steel/white commercial grade moulded polystyrol

visual and audible/yes yes / SmartModule integrated, removable / WiFi/LAN integrated, USB interface vertical LED light strip recessed in left wall with separate switch 1/1 wire shelves plastic-coated

2.4" touch & swipe colour display

antimicrobial handle with opening mechanism 1 x Ø 10 mm/yes electronic, with remote control right, reversible on site

400/370

50 kg / 225 kg

102/84 kg

7113308 7113312/9293493 9029022/7435208 9080022/9086924 9006786 6123395/9086958



#### HMFvh 4001 ver. H63

Perfection

394/239 litre 597/654/1884 406/370/1660 172 kWh +10 °C to +35 °C 250 kJ/h/R 600a 49 dB(A) 220 - 240V~ / 50 Hz 2.0 A / 180 W forced-air/automatic +5°C 4.9°C/2.6°C steel/white commercial grade moulded polystyrol 2.4" touch & swipe colour display immediately upon power failure for at least 12 hrs immediately upon power failure for at least 12 hrs visual and audible / yes yes/SmartModule integrated, removable / WiFi/LAN integrated, USB interface LED lighting column, left 1/1

wire shelves plastic-coated 400/370 50 kg/225 kg

antimicrobial handle with opening mechanism 1 x Ø 10 mm/yes electronic, with remote control right, reversible on site 87 / 79.5 kg 7113308 7113312/9293493

9029022/7435208 9086926/9080023 9080022/9086924 9006786 6123395/9086958

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

<sup>2</sup> Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration. 3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.



#### **MKUv 1613**

Gross / net capacity	152 / 109 litre
Exterior dimensions in mm (w/d/h)	601/618/820
Interior dimensions in mm (w/d/h)	440 / 435 / 670
Energy consumption in 365 days <sup>1</sup>	408 kWh
Ambient temperature range	+10 °C to +35 °C
Heat output	438 kJ/h
Refrigerant	R 600a
Sound power level	47 dB(A)
Voltage / frequency	220 - 240V~/50 Hz
Connection rating	1.0 A
Rated consumption watts	130 W
Cooling system	forced-air
Defrost	automatic
Temperature range	+5°C
Gradient <sup>2</sup> /max. fluctuation <sup>3</sup>	5.1°C/4.9°C
External cabinet finish	steel/white
Door material	glass door
Internal liner material	commercial grade moulded polystyrol
Type of control	LED 7-segment display with buttons
Power failure alarm	immediately upon power failure for at least 12 hrs
Fault: warning signal	visual and audible
Volt-free alarm contact	yes
SmartMonitoring compatible	yes
Connectivity type	SmartCoolingHub
Connectivity solution	retrofittable
Interface	RS485
Interior light	LED ceiling light strip with separate switch
Number of shelves / Adjustable shelves	4/3
Shelf material	wire shelves plastic-coated
Usable shelf area in mm (w / d)	440/420
Shelf loading	45 kg
Handle	slimline handle with integrated opening mechanism
Access ports	1 x Ø 10 mm
DIN 13277	yes
Type of lock	mechanical
Door hinges	right, reversible on site
Gross / net weight	48 / 45 kg
Accessories	
White grid shelf	7113333
Stacking kit, white	9592697
Roller bars	9590521
SmartCoolingHub	6125784

on request

#### **MKUv 1610**

MediLine

on request

	109 litre
	618/820
	435/670
273 k	
	C to +35°C
184 k	<u> </u>
R 600	)a
47 dE	* *
220-	240V~/50 Hz
1.0 A	
100 V	V
force	d-air
autor	natic
+5°C	
4.3°C	C/4.6°C
steel	/white
steel	
comn	nercial grade moulded polystyrol
LED 7	7-segment display with buttons
imme	ediately upon power failure for at least 12 hrs
visua	l and audible
yes	
yes	
Smar	tCoolingHub
retrof	fittable
RS48	5
/ /7	
4/3	shelves plastic asstad
	shelves plastic-coated
440/	
45 kg	
	ine handle with integrated opening mechanism
	10 mm
yes	onical .
	nanical
	reversible on site
42/3	iy kg
7113	777
9592	
9590	
	521 784

SmartCoolingHub

Additional lock barrels (up to 10)



#### MKUv 1613 ver. H63

#### MediLine

Gross/net capacity	152/76 litre
Exterior dimensions in mm (w/d/h)	601/618/820
Interior dimensions in mm (w/d/h)	440 / 435 / 670
Energy consumption in 365 days <sup>1</sup>	369 kWh
Ambient temperature range	+10°C to +35°C
Heat output	440 kJ/h
Refrigerant	R 600a
Sound power level	47 dB(A)
Voltage / frequency	220 – 240V~ / 50 Hz
Connection rating	1.0 A
Rated consumption watts	130 W
Cooling system	forced-air
Defrost	automatic
Temperature range	+5°C
Gradient <sup>2</sup> / max. fluctuation <sup>3</sup>	4.1°C/1.5°C
External cabinet finish	steel/white
Door material	glass door
Internal liner material	commercial grade moulded polystyrol
Type of control	LED 7-segment display with buttons
Power failure alarm	immediately upon power failure for at least 12 hrs
Fault: warning signal	visual and audible
/olt-free alarm contact	yes
SmartMonitoring compatible	yes
Connectivity type	SmartCoolingHub
Connectivity solution	retrofittable
Interface	RS485
Interior light	LED ceiling light strip with separate switch
Number of shelves	1
Number of drawers	3
Shelf material	wire shelves plastic-coated
Usable shelf area in mm (w / d)	440/420
Shelf loading	45 kg
Handle	slimline handle with integrated opening mechanism
Access ports	1 x Ø 10 mm
DIN 13277	yes
Type of lock	mechanical
Door hinges	right, reversible on site
Gross / net weight	51/48 kg
Accessories	
Stacking kit, white	9592697
Roller bars	9590521



#### MKUv 1610 ver. H63

	MediLine
	142/76 litre
_	601/618/820
_	440 / 435 / 670
	273 kWh
	+10°C to +35°C
	185 kJ/h
	R 600a
	47 dB(A)
	220 - 240V~ / 50 Hz
_	1.0 A
	100 W
_	forced-air
	automatic
	+5°C
	2.8°C/1.3°C
	steel/white
	steel
	commercial grade moulded polystyrol
	LED 7-segment display with buttons
	immediately upon power failure for at least 12 hrs
	visual and audible
	yes
	yes
_	SmartCoolingHub
	retrofittable
_	RS485
	1
	3
	wire shelves plastic-coated
	440 / 420
	45 kg
_	slimline handle with integrated opening mechanism
	1 x Ø 10 mm
	yes
	mechanical
	right, reversible on site
	45/42 kg
	9592697
_	9590521
	6125784

on request

6125784

on request

Additional lock barrels (up to 10)

<sup>1</sup> Measured at +25°C ambient temperature and +5°C set temperature for fridges and -20°C for freezers.
2 Gradient as defined in EN 60068-3: the difference between the warmest and coldest average measurements, increased by their expanded uncertainty, throughout the duration.
3 Max. fluctuation as per EN 60068-3: greatest fluctuation value determined throughout the duration of measurements.

Accessories

#### Pharmaceutical refrigerators compliant with DIN 13277



#### Glass shelf

Additional shelves made of high-quality safety glass not only increase storage space but also make it easier to see the goods. They are ideal for storing smaller containers or materials. In addition, the shatterproof glass shelves are quick and easy to clean.



#### Grid shelf white

If you need more storage space or want to separate stored products and have a better overview, Liebherr appliances can be equipped with additional grid shelves. Made of metal with a polypropylene coating, they are identical to the ones that come as standard in the appliances and you benefit from the same corrosion-resistant and durable extra shelving.



#### Base grid white

With the sturdy base grid, you can also make the most of the appliance floor. The grid has an abrasion-resistant coating and protects the inner liner from scratches and other damage.



Pharmaceutical refrigerators compliant with DIN 13277

#### SmartCoolingHub

The SmartCoolingHub provides the basis for connecting your professional Liebherr appliances. Up to 20 network-capable Liebherr appliances can be connected via cable.



#### Perforated metal shelf white

To ensure that even small items are stored stably in the refrigeration appliances, Liebherr has developed shallow perforated metal shelves especially for this purpose. They are made of coated metal and designed for a maximum load of up to 45 kg. The perforation ensures unhindered air circulation throughout the storage space.



#### Flexible scanner rail

Scanner rails provide a perfect overview of the materials stored in the refrigerator. Thanks to their flexibility, they can be easily attached to the front of the grid shelves. With correspondingly marked paper cards, they make it easy to sort and find stored products.



#### Height-adjustable feet

The height-adjustable feet create the necessary clearance for easy cleaning under the appliance. With an individually adjustable height of 90 to 120 mm, they perfectly compensate for any unevenness on the floor.



#### Roller bars

The sturdy castors within the roller bars have a diameter of 25 mm (total height 30 mm) to facilitate transport and allow cleaning underneath and behind the appliance. Two roller sets including mounting accessories are supplied.



#### Special locking

To protect the stored products from unwanted access, up to 10 additional special locks are available as accessories for the refrigerators and freezers. This way, different locks can be installed on several appliances so that only the people responsible for a particular appliance have access to it.



#### Castors

The sturdy castors facilitate transport and allow quick cleaning underneath and behind the appliance. A total of four castors including mounting accessories are supplied. Two of the castors also have a locking brake.



#### Side-by-Side set white

Using the side-by-side set, two appliances can be placed next to each other. The required gap between the appliances is maintained, and they are neatly connected by the cover strip. This ensures tidy installation and avoids any condensation or water between the appliances.



#### Remote control electronic door lock

With additional remote controls for refrigerators and freezers with electronic door locks, you can allow other people to access stored goods while retaining full control at all times. For example, you can individually control whether renewed access should be granted or denied to a person by activating or deactivating their remote control.



#### Stacking kit

The stacking kit can be used to combine two refrigerators or refrigerators and freezers. This way, different temperature zones are available on a small surface area.



#### Digital input for electronic lock

The digital input for the electronic lock allows Liebherr appliances to be integrated into existing external time and attendance or access control systems. When a voltage signal triggers the remote box, the electronic lock opens and allows access to the appliance. Possible applications include connection to access control systems or integration into goods management applications.

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## SmartMonitoring saves you work. And worry.

In medicine and research, precision and safety are of the utmost priority – and this also applies to storing sensitive substances. Laboratory samples, vaccines and medicines that have to be refrigerated require constant conditions with precisely defined temperature ranges. The strict specifications and DIN standards on the storage of medicines place great demands on staff.

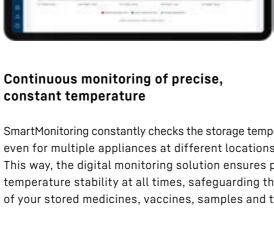
SmartMonitoring significantly relieves the workload for these time-consuming and laborious duties. The digital monitoring solution automatically and continuously monitors and fully documents all the relevant temperature data and appliance data for you and alerts you immediately if any deviations occur. This leaves you to concentrate of what matters most: your research, your customers, or your patients.

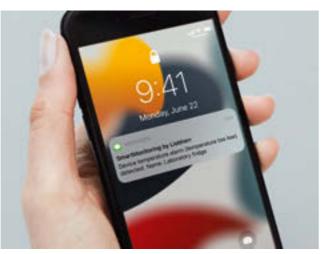
## Maximum safety, always in view

The combination of a professional Liebherr appliance and intelligent SmartMonitoring software guarantees optimal protection for sensitive substances. The cloud-based solution monitors and documents temperature stability round the clock and alerts you immediately if deviations occur. Preventing problems before they arise is the definition of maximum safety.



SmartMonitoring constantly checks the storage temperature, even for multiple appliances at different locations. This way, the digital monitoring solution ensures precise temperature stability at all times, safeguarding the quality of your stored medicines, vaccines, samples and tissue.





#### SmartMonitoring dashboard everything at a glance

You can view all measurements and temperature data, alarm notifications and appliance statuses at any time on the web-based, intuitively operated SmartMonitoring dashboard, even for multiple appliances at different locations. With maximum safety always in view, you can relax and concentrate fully on your work.



#### Immediate alerts in the event of deviations

If there are deviations in the storage temperature, you are immediately alerted by email, text message, or phone. This way, you can react before problems arise. If an incident occurs, the alarm list will show the minimum and maximum values so that you can assess any potential for

## Well protected in all situations with the right

If the appliance is accidentally switched off or disconnected from the power supply or the internet connection drops, SmartMonitoring alerts you immediately.

In addition, you can individually set a temperature limit value via SmartMonitoring, giving you time to react even earlier if necessary.

#### Complete documentation without time-consuming paperwork

SmartMonitoring constantly documents the temperature and all other refrigeration parameters for your stored substances. The automatically generated reports are saved for six months and can be viewed and downloaded at any time. This lightens the daily workload and helps you to demonstrate compliance.

#### External data loggers enable universal expansion of your SmartMonitoring solution

To efficiently expand the SmartMonitoring range, Liebherr appliances that were not previously compatible with SmartMonitoring and even non-Liebherr appliances can now be monitored with SmartMonitoring by integrating external data loggers.

The different data logger types reliably monitor deviations and door openings, as well as product, appliance, room and air temperatures. Even at ultra-low temperatures, you are protected thanks to a specially designed data logger.

Take advantage of a universal product solution that offers you additional flexibility and maximum reliability.

#### Maximum safety and convenience with SmartMonitoring

Enjoy the advantages of Liebherr's digital monitoring solution:

- · Optimal protection of your valuable products
- Fully documented proof of temperature
- · Prevention of damage and loss of quality
- More time for you to focus on your work by

The availability of SmartMonitoring varies in different countries.

If SmartMonitoring isn't available in your country yet, get in contact with us.

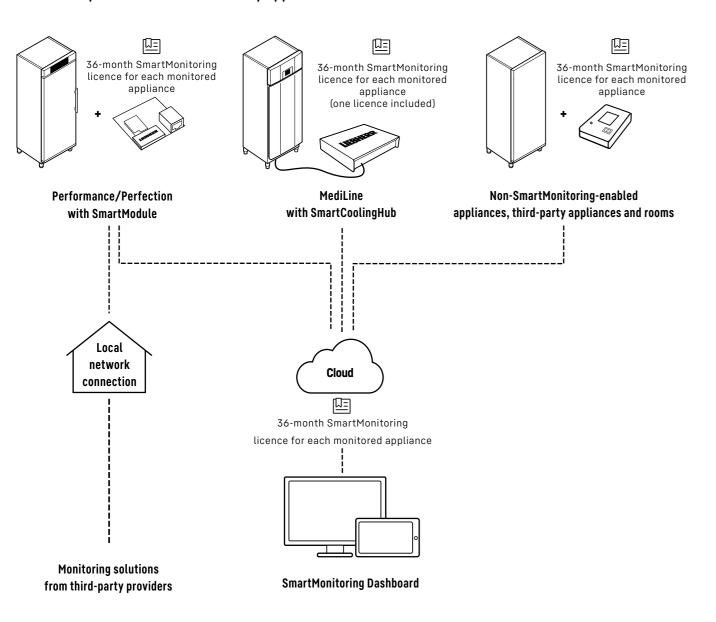


home.liebherr.com/smartmonitoring

## SmartMonitoring – it's that easy to be on the safe side.

There are various ways to enjoy all of the benefits of the digital monitoring solution. One thing they all have in common is that they are simple and convenient. Liebherr will be happy to help you take your first steps towards maximum safety. Lightening your workload right from the very start.

#### Network-capable medical or laboratory appliance





#### Get your licence to chill.

With the right licence, you can take full advantage of the professional SmartMonitoring solutions from Liebherr. This includes all the basic functions such as monitoring, documentation and email alerts.

- 36-month term from activation
- · No automatic extension
- One licence per monitored appliance (fridge/freezer)
- Authorisation for any number of users
- User and appliance management (role-based)
- Additional alerts via text message and phone optionally available

Register your appliance now and get a free 6-month trial licence.



#### ${\bf Smart Cooling Hub}$

The SmartCoolingHub provides the basis for connecting your professional Liebherr appliances from the MediLine series. Up to 20 network-capable Liebherr appliances can be linked via cable.



#### Data logger, temperature

The standard online data logger reliably records temperature data and transmits it directly to SmartMonitoring via a WiFi connection.



#### SmartModule

SmartModule connects Liebherr appliances of the Performance series to SmartMonitoring or existing monitoring systems. The small unit with integrated LAN/WiFi is ready to use as soon as it is mounted on the back of the appliance.



#### Data logger, three-channel

In addition to the standard temperature sensor, the three-channel data logger features an additional temperature sensor which can be used to monitor the temperature of sensitive products, as well as a door contact sensor.



#### Local interface

Liebherr appliances can also be used with existing monitoring solutions. The SmartModule acts as a local interface for transferring measurement data to your existing monitoring system.



#### Data logger, ULT

For reliable storage at extreme temperatures, this data logger has a special temperature sensor for temperature ranges as low as -200 °C, so that all cooling situations can be covered with a single solution.



"We love SmartMonitoring because it lets us concentrate on what really matters: emergency medicine."



The outpatient centre of Söflingen day clinic treats around 30 patients every day in three operating theatres, which includes providing medication. To ensure their effectiveness, reliable cooling of the medicines must be guaranteed at all times. SmartMonitoring takes over this time-consuming and stressful task at the clinic.

The pharmaceutical fridge combined with SmartMonitoring from Liebherr lightened the workload as soon as it was installed.



Complex and time-consuming tasks that

The German Red Cross has nine ambulance stations in Ulm and Heidenheim, with 400 employees and 50 vehicles. The medicines have to be kept refrigerated with maximum safety to be constantly available for use in an emergency. This is ensured by reliable pharmaceutical refrigerators as well as SmartMonitoring from Liebherr, which guarantees maximum storage safety at all the sites.

SmartMonitoring is in use day and night for safe storage and to lighten the workload at the ambulance station in Ulm:







Watch the case study video for more information

Dr Jana Wichmann, manager of the Söflingen day clinic

"When the fridge arrived, a team came along to set everything up. And it all works perfectly!"







Watch the case study video for more information

Lars Grau Head of Materials management

"SmartMonitoring makes it possible to incorporate several ambulance stations in the system and monitor them all from one place."

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