

LÖWENSTEIN
medical



LEON plus edition

True to itself. Ready for the future.

 With people in mind



LEON plus edition

True to itself. Ready for the future.

Anesthesia is constantly evolving – and with it the requirements for a modern anesthesia workstation. The LEON plus edition was created to keep pace with future developments.

Building on the proven concept of the Leon plus, it combines sophisticated ergonomics, flexible configuration options and a sustainable approach to the utilization of anesthetic gases for the first time. These features and significantly enhanced IT performance make the LEON plus edition a reliable partner for modern anesthesia.



The new product benefits

Ergonomics

The ergonomic components of the LEON plus edition are designed to enable concentrated work in every phase of anesthesia management. The design supports the anesthesiology work flow from preparation at the pull-out writing table to patient induction and ongoing ventilation on the device. The new tilt- and swivel-adjustable monitor ensures an optimum view of parameters, measured values, messages, loops, curves and trends from any position.

User friendliness

The user interface of the LEON plus edition is new, but will feel familiar to many users. The operating logic is identical to the intensive care ventilators in the elisa family and LEONI 4 from Löwenstein and offers an agile system with intuitive operation and needs-based configuration options. This continuity simplifies work processes, reduces the amount of training required and at the same time increases operating safety – and thus safety for patients.

Future viability

The LEON plus edition is more powerful than its predecessors. It features significantly enhanced processing capacity and is therefore specifically designed with future advancements in mind. Requirements and standards in medical technology are constantly changing. This makes increased performance an important basis for the secure integration of all further developments.

Find out more here:



Ergonomics

Flexible components for all processes

The LEON plus edition is a reliable anesthesia assistant that meets the requirements of a modern anesthesia workstation thanks to its ergonomic design. Each component is designed to flexibly and safely support the work flow in the operating room.

Tilt- and swivel-adjustable touchscreen monitor

The monitor can be individually adjusted and ensures optimal visibility of all relevant information in every situation. Whether during the induction of anesthesia, adjusting parameters, or communicating with the surgical team, posture is supported in every position and the display remains clear.

Integrated work light

The work light is integrated into the device and provides targeted illumination of the writing table.

Pull-out writing table

The sturdy table provides space for documentation or preparatory steps and is immediately accessible when needed. After use, it retracts into the device, creating greater freedom of movement.

Integrated storage space

Important materials are available directly at the workstation. The integrated storage space enables organized storage of accessories and consumables.

Integrated profile rails on both sides

Accessories such as lamps, support arms or syringe pumps can be flexibly attached to the integrated profile rails and just as easily removed again. This creates a tidy, customizable working environment that adapts to the individual requirements of the team.

Central locking brake

The central locking brake can be released effortlessly with the foot when required and quickly and safely ensures stability.

Changing the absorber during operation

The CO₂ absorber can be changed during operation without interrupting ventilation. This saves time, reduces stressful situations, and enables a continuous work flow even during longer procedures.

Integrated vacuum source for bronchial suction

An integrated vacuum source with vacuum indicator allows direct bronchial suction on the device. This means shorter distances, fewer device changes and ergonomically optimized work organization within easy reach.



Dimmable reading light



Pull-out writing table



Integrated storage space



Integrated profile rails on both sides



Central locking brake



Changing the absorber during operation

The user interface: Intuitive and individual

A clearly structured user interface is a prerequisite for safe and efficient anesthesia procedures. The LEON plus edition supports the daily routine with a clear display, intuitive operating logic and a density of information adapted to the situation.

Instand-View technology – resolution & display size

Instand-View technology – resolution & display size
The 15.6" TFT touchscreen with full HD resolution displays all parameters, curves and loops in great detail so that even the smallest changes can be detected early on.

Configurability

The contents of the user interface can be customized. This keeps the focus on the essentials at all times.

Measuring curves and loops

Thanks to the high-precision display and the freezing curves function, curves and loops can be measured in detail. This facilitates analysis and supports well-founded clinical decisions.

Display of spontaneous breathing efforts and assisted breaths

Spontaneous inspiratory efforts by the patient and assisted breaths are displayed visually. This transparent display promotes an understanding of individual breathing behavior and supports needs-based ventilation.

Manual encoder, touchscreen

Operation is carried out either directly via the touchscreen or the tactile encoder wheel. Settings can be adjusted quickly, safely, and precisely.

Number of waveforms

Up to four ventilation waveforms can be displayed simultaneously. Display, parameters, waveform colors, and prioritization can be individually configured. If desired, the waveforms can also be displayed in an overlapping view.

Data management and trend visualization

An integrated data management system with zoomable trend display enables precise monitoring of trends as well as later evaluation of ventilation data – directly on the device or on external systems.

Screenshot function

Content from the user interface, waveforms, and loops can be saved for documentation or later analysis and transferred to external storage devices.

Day and night mode/themes






A customizable day and night mode, as well as three selectable themes, ensure optimal readability under all lighting conditions.

Help function

An integrated help function supports the clinical staff in solving problems. Clear text descriptions, especially for alarm messages, provide quick orientation and increase operational safety.

16:54 97% IBW

PCV 

CO₂ Vol% **0,0**
 Insp Exp
 O₂ % **100**
 Insp Exp



Datum/Zeit	Event	CO ₂ In/ei Vol%	O ₂ In/ex %
12.12.25 16:20:00		0,0/0,0	100/100
12.12.25 16:15:00		0,0/0,0	99/99
12.12.25 16:11:44	PCV		
12.12.25 16:11:40	IMV		
12.12.25 13:44:54	Standby		
12.12.25 13:40:00		0,0/0,0	100/69
12.12.25 13:35:58	Manual / Spont		
12.12.25 13:35:56	PCV		
12.12.25 13:25:08	Standby		
12.12.25 13:25:00		0,0/0,0	100/100
12.12.25 13:24:31	HLM		
12.12.25 13:20:13	Manual / Spont		
12.12.25 13:20:11	PCV		
12.12.25 13:20:00		0,0/0,0	100/100
12.12.25 13:18:27	Manual / Spont		

O₂ Imp % **100**

MV l/min **4,7**

V_T ml **404**

P_{Peak} mbar **19**

Freq 1/min **12**

PEEP mbar **0**

P_{Plateau} mbar **-**

Patient

Alarmgrenzen

Graphen

Einstellungen

00:00:01
Reset

BEATMUNG STOPPEN

PCV **Aus** IMV HLM
 I:E **1:2**
 90 V_T ml **Aus**

Ansicht aufklappen

Manueller Atemzug

Abbrechen

OK

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Ventilation modes for maximum patient safety

The LEON plus edition offers a wide range of ventilation modes for the safe and individually tailored care of patients of all ages. Even at low tidal volumes, the anesthesia assistant supports the implementation of lung-protective strategies with finely adjustable parameters and high response precision.

Available forms of ventilation

Abbreviation	Mode	Description/area of application
IMV	Volume-controlled ventilation	Standard mode for controlled ventilation
PCV/VTG	Pressure-controlled ventilation	For lung-protective strategies with pressure limitation
S-IMV	Synchronized intermittent mandatory ventilation	Combination of spontaneous breathing and mechanical support
S-PCV	Pressure-controlled synchronized ventilation	Synchronized pressure ventilation during spontaneous breathing
PSV	Pressure-supported ventilation	Supports spontaneous breathing, e.g., during emergence from anesthesia
HLM	Ventilation mode when using a heart-lung machine	Especially for ventilation during extracorporeal circulation
MAN	Manual ventilation	For individualized ventilation control by users
SPONT	Spontaneous breathing	Enables spontaneous breathing with monitoring
MON	Patient monitoring during regional anesthesia	Monitoring without active ventilation
NEO mode	Neonatal mode	Controlled, precise ventilation with very small tidal volumes
VTG	Tidal volume guarantee	Ensures the set tidal volume is maintained even in the event of changes in compliance

COMING
SOON

Synchronized forms of ventilation
(S-PCV and S-IMV) with pressure support
for spontaneous breathing



Other relevant functions

The LEON plus edition is not only an anesthesia assistant but a well-designed system for perioperative use. Functions such as gas analysis, data management, battery backup power, and the simple, hygienically safe reprocessing of the patient system are integral components of the equipment and support stable and safe patient care in daily operating room practice.

Data management and connectivity

The LEON plus edition provides data interfaces for PDMS and HIS systems. Ventilation and monitoring data are automatically transferred to the connected documentation systems. This enables seamless documentation and supports efficient clinical work flows. The integrated trend display with zoom function offers clear monitoring of relevant parameters directly on the device.

Monitoring and gas analysis

For precise monitoring of respiratory gas composition, the LEON plus edition features integrated anesthetic gas monitoring with automatic gas identification. Oxygen measurement is performed using a paramagnetic method and is characterized by high measurement accuracy. All measurement data is clearly and systematically presented on the system display. This ensures that users always maintain control over anesthesia management.

Inspiratory hold maneuver

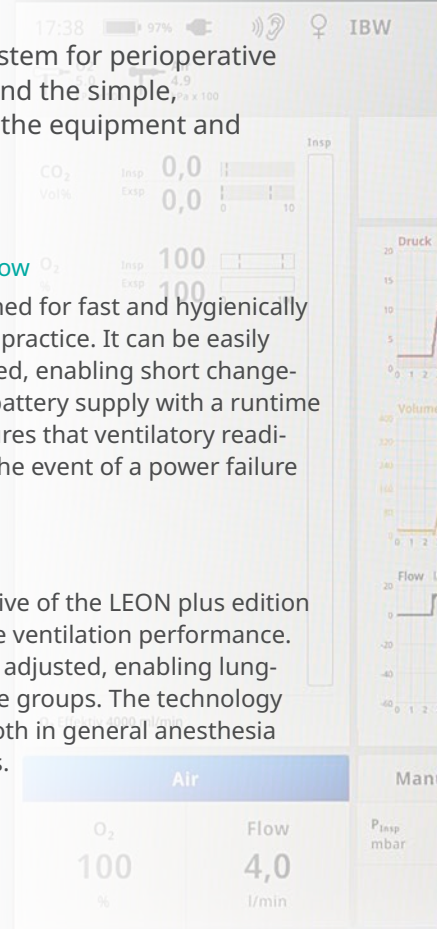
Will enable precise measurement of alveolar pressure in the future through a brief inspiratory pause at the end of inhalation. Supports assessment of lung mechanics and fine adjustment of ventilation, especially in cases of limited compliance.

Device handling and work flow

The patient system is designed for fast and hygienically safe use in everyday clinical practice. It can be easily reprocessed and reassembled, enabling short change-over times. The integrated battery supply with a runtime of at least 100 minutes ensures that ventilatory readiness is maintained even in the event of a power failure or during transport.

Ventilation technology

The pneumatic ventilator drive of the LEON plus edition provides reliable and precise ventilation performance. All parameters can be finely adjusted, enabling lung-protective care across all age groups. The technology supports safe ventilation, both in general anesthesia and in neonatal applications.



COMING
SOON


Recruitment maneuver






Expands ventilation options to include targeted re-expansion of collapsed lung regions. Improves oxygenation and supports lung-protective ventilation – such as in the case of ARDS or intraoperative atelectasis.

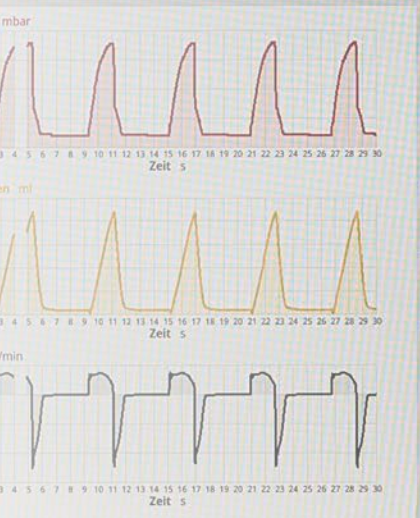
HL7 interface

The HL7 interface will soon enable standardized data transfer to clinical information systems. Ventilation and anesthesia data can be directly integrated and documented.



PSV 



Alarmgrenzen		Event Log	
12.12.2025			
17:28:19	Patientendaten geändert		
17:17:15	Gasmessung wird kalibriert		
17:17:07	Gasmessung wird kalibriert		
17:05:43	Stummschaltung deaktiviert		
17:05:42	Stummschaltung aktiviert		
17:05:42	Apnoe: Backup Atemzug wurde verabreicht		
16:56:48	Apnoe: Backup Atemzug wurde verabreicht		

O ₂ Insp %	100
MV l/min	3,6
V _{Te} ml	330
P _{Peak} mbar	19
Freq	11
mbar	
P _{Plateau} mbar	

 Patient
 Alarmgrenzen
 Graphen
 Einstellungen
 Uhr

Dual / Spont **PSV** IMV HLM
 19 PEEP mbar Aus Trigger l/min 1,5
 Backup s 4

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O₂ +

Technical specifications

The LEON plus edition is consistently geared to the requirements of modern anesthesia and at the same time builds on proven technology. It combines proven technologies with new ergonomic components and, thanks to enhanced IT performance, is well prepared for future developments.



Technical data

Volume-controlled ventilation (IMV)

Tidal volume - V_{Ti}	3 - 1600 ml
Ventilation frequency	4 - 100 1/min
I:E ratio	1:4 - 4:1 (in increments of 0.1)
PEEP	Off, 1 - 30 mbar
Plateau	Off, 10 - 50% (in increments of 5%)
Pressure limitation P_{MAX}	10 - 80 mbar

Synchronized volume-controlled ventilation (S-IMV)

Tidal volume - V_{Ti}	3 - 1600 ml
Inspiration time T_{INSP}	0.2 - 10 s
Ventilation frequency	4 - 60 1/min
PEEP	Off, 1 - 30 mbar
Plateau	OFF, 10 - 50% (in increments of 5%)
Pressure limitation P_{MAX}	10 - 80 mbar
Trigger threshold	0.1 - 10 l/min

Pressure-controlled ventilation (PCV)

Ventilation frequency	4 - 100 1/min
I:E ratio	1:4 - 4:1 (in increments of 0.1)
Plateau	10 - 90% (in increments of 5%)
Ventilation pressure P_{INSP}	5 - 60 mbar
Leak	According to DIN EN ISO 80601-2-13 < 150 ml/min at 30 mbar
PEEP	Off, 1 - 30 mbar

Synchronized pressure-controlled ventilation (S-PCV)

Ventilation frequency	4 - 60 1/min
Inspiration time T_{INSP}	0.2 - 10 s
Plateau	10 - 90% (in increments of 5%)
Ventilation pressure P_{INSP}	5 - 60 mbar
PEEP	Off, 1 - 30 mbar
Trigger threshold	0.1 - 10 l/min

Pressure-supported spontaneous breathing (PSV Assist)

PEEP	Off, 1 - 30 mbar
Trigger threshold	0.1 - 10 l/min
Backup	1, 2, 3, 4, 6, 8, 10, 15, 30, 45 seconds

Manual ventilation

Manual resuscitation bag	Manual ventilation is performed using a manual resuscitation bag that serves as a reservoir.
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Safety devices

Minimum O ₂ concentration	Electrical control of the fresh gas activation so that in an O ₂ /N ₂ O gas mixture, the oxygen concentration cannot fall below 25%. Fresh gas O ₂ (100%) of at least 200 ml/min is guaranteed (except HLM)
Safety valves	Valves with adjustable pressure relief Automatic safety valve that prevents hazards due to excessive pressure Automatic safety valve that prevents hazards due to excessive negative pressure

Monitoring

Pressure	-10 to 100 mbar (peak, medium, peep, plateau, CPAP)
Tidal volume - VTi	0 - 5000 ml
Minute volume	0 - 50 l
Frequency	0 - 150 1/min
Flow	-200 to 200 l/min
Lung functions	C ₂ O/C, static compliance, resistance, loops
O ₂ -monitor (free of consumables)	Inspiratory/expiratory 0 - 150 1/min
CO ₂ -monitor	Inspiratory/end-tidal CO ₂ concentration.
N ₂ O-monitor	Inspiratory/end-tidal N ₂ O concentration.
Anesthetic gas monitor	Inspiratory/end-tidal – halotane, enflurane, isoflurane, sevoflurane and desflurane
Automatic gas type detection (Auto ID)	With automatic gas type detection
MAC	Determination of minimum alveolar concentration
Interfaces	Serial: COM1, COM12 Optional: Philips VueLink/IntelliBridge, Coming soon: HL-7
Neo mode	Volume guarantee with PCV Tidal volume: 3 - 600 ml Frequency: 14 - 100 1/min

Outstanding product quality Made in Germany. We are Löwenstein.

Our portfolio

Löwenstein offers a comprehensive and complete product portfolio – from ventilation to anesthesia to neonatology. We develop the best concept for your hospital. Everything from a single source - always with the focus on people.

Outstanding service

In our comprehensive service concept, Löwenstein offers not only training and instruction for medical professionals, but also regular, on-schedule maintenance and expert repairs in accordance with manufacturer specifications. We are there when you need us.

Made in Germany

Löwenstein develops and manufactures medical technology in Germany. This allows us to guarantee that our products are synonymous with safety, reliability, and durability. Quality made in Germany.

Innovation and the future

With many years of expertise and experience and close collaboration with users, Löwenstein is a driving force for innovation. Investments in research and development ensure forward-looking technologies. This means shorter distances, fewer device changes and ergonomically optimized work organization within easy reach.

Find out more here:





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