



LÖWENSTEIN
medical

Neonatology

Complete range for the smallest patients: Ventilators,
Nursing care, Thermotherapy and Phototherapy, Accessories

 With people in mind

Leoni plus

Neonatal intensive care ventilation with the highest standards



Leoni plus is suitable for the long-term ventilation of premature infants, newborns and children weighing up to 30 kg. In addition to the basic ventilation modes CPAP, IPPV/IMV, SIPPV and SIMV, the device offers two PSV modes. Moreover, the administered tidal volume can be restricted via the volume limit function. The assisted ventilation modes provide volume-controlled tidal volume.

The precise hot wire flow sensor, designed for placement near the patient, automatically tracks trigger sensitivity relative to the patient's tidal volume (VT trigger adaptation).

The powerful integrated Leoni High-frequency Oscillatory ventilation (HFO) module* uses membrane oscillation. The frequency range of 5 to 20 Hz is suitable for use with patients weighing up to 12 kg. The managed amplitude control compensates leakages and compliance changes within the adjustment range.

The device is easily and intuitively operated via the 12-inch color touchscreen or the control knob.

For optimal ergonomic organisation of the workspace in the ward, the display can be removed and attached to suit individual needs and working environments. All relevant settings, measurements, alarms and curves and loops are available in a single display. Users can freely configure the display to satisfy their own requirements by choosing the number of curves and loops and measurements.

Key product benefits at a glance:

- HFO* uses membrane oscillation
- Volume-controlled ventilation
- PSV mode
- NIV (nCPAP, s-nCPAP, nIPPV, s-nIPPV, HiFlow, nHFO with Neojet*)
- VT trigger adaptation
- 12-inch LCD color touchscreen, removable
- Simple operation – no sub-menus
- Curves and loops
- Battery operation for up to 200 minutes

Abdominal Sensor

In the first few months of a baby's life, diaphragmatic or abdominal breathing is predominant. What could be more obvious than monitoring the breathing activity of children at the diaphragm and using the resulting signals as a trigger for inspiration and expiration?

The abdominal sensor by Löwenstein Medical generates reliable trigger signals for non-invasive ventilation but does not interfere with respiratory mechanics and does not add weight to the patient interface or increase dead space.

Our neonatal ventilation device Leoni plus, together with the optional abdominal sensor, synchronizes the non-invasive ventilation forms s-nIPPV and s-nCPAP, while providing apnea monitoring in both ventilation modes.



Leoni plus CLAC 2.0

CLAC 2.0 – the reliability you expect with optimized control algorithm.

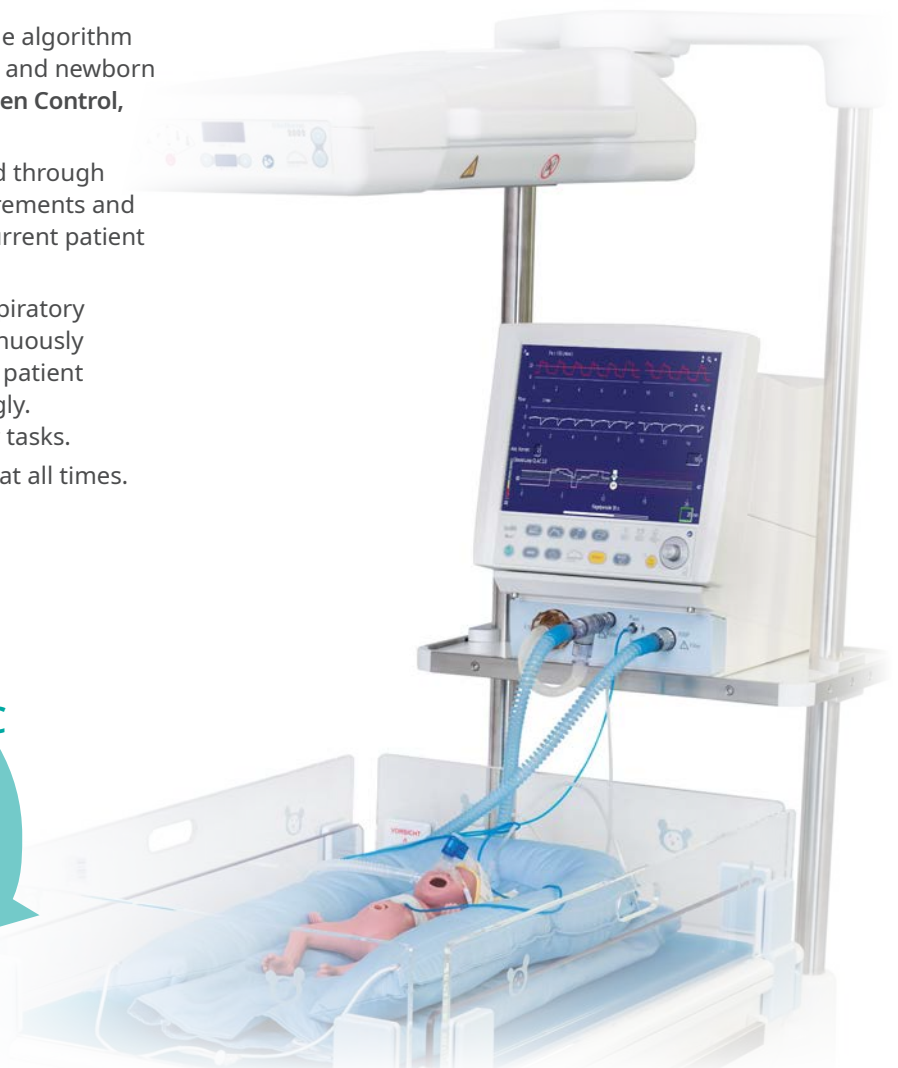
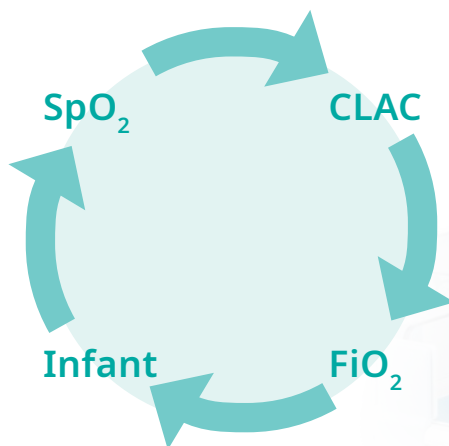


Löwenstein Medical has developed a unique algorithm for automatic oxygen control in premature and newborn babies, **CLAC: Closed-Loop Automatic Oxygen Control**, and integrated it in the Leoni plus model.

The ventilation device can be fully operated through the user interface, which visualizes measurements and alarm settings. Users can determine the current patient status with a glance at the display.

CLAC assumes the task of adapting the inspiratory oxygen in the breathing gas (FiO_2) by continuously monitoring the needs and condition of the patient and adjusting the device settings accordingly. This leaves clinicians free to focus on other tasks.

Of course, manual intervention is possible at all times.



Leoni plus Transport

Expands treatment options in patient transport with HFO ventilation



Leoni plus Transport expands your treatment range, specifically in patient transport. Thanks to the integrated high-performance battery, off-grid use is feasible for up to 200 minutes in conventional ventilation modes and for up to 60 minutes in HFO. Users can select the number of curves and measurements to customize the display.

Leoni plus Transport features the ventilation modes CPAP, IPPV/IMV, S-IPPV/SIMV, two PSV modes and NIV (nCPAP, nIPPV, HiFlow, nHFO with Neojet* and HFO). Leoni plus Transport has full approval for ground, helicopter and aircraft transport.

Key product benefits at a glance:

- Simple and intuitive operation
- Outstanding ventilation performance
- Transport approval
- Only transport ventilator with HFO flight approval



Approved for use in aircraft according to RTCA DO-160



Approved for road transport (EN 1789)



Intended for in-hospital use



Approved for use in aircraft according to RTCA DO-160

Neojet System



nCPAP system for premature babies and infants

Neojet supports spontaneous breathing of premature and fully developed babies. The set comprises Neojet, a set of adapter tubes, prongs, masks, a tape measure and bonnets.

Neojet is attached to baby's head by means of easy-to-use bonnets and to its nose with short nasal prongs or soft nasal masks.

▪ **Neojet active/variable flow-nCPAP generator:**

This generator is designed to support the spontaneous breathing of newborns by creating an adjustable jet with continuous positive pressure. Suitable for premature and fully developed newborns up to a tidal volume of 20 ml.*

- **Neojet set of adapter tubes:** For Leoni plus and Leoni plus Transport. Individually packaged for single use.
- **Nasal masks:** Individually packaged for single use in combination with Neojet. The nasal masks are distinguished by ultrasoft silicone and anatomical shape.
- **Nasal prongs:** Individually packaged for single use in combination with an active Neojet. Available in different sizes.

Key product benefits at a glance:

- Low noise
- Pressure trigger and spontaneous breathing detection without additional sensor
- Flexible adapter for positioning prongs and mask
- Patented flex tubes for easy application
- Based on the Benveniste valve with volume chamber

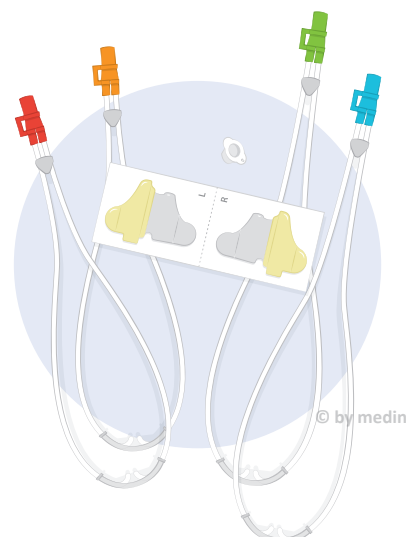


Nuflow®

The **Nuflow®** high-flow cannula of soft, skin-compatible silicone achieves the perfect balance between efficient therapy and maximum wearing comfort. Even the smallest cannula sizes allow flow rates of up to 8 LPM and thus correspond to the latest knowledge on the use of HFNC in neonatology.

Key product benefits at a glance:

- Greater patient comfort
- Low noise level and system pressure
- Customized, skin-friendly attachment
- Anatomically adjusted shape of prongs



* The Neojet-Generator is available as a reusable variant. Please ask for details.

WILAflow Elite

The new generation of nCPAP ventilation for premature and newborn infants.

WILAflow Elite is a micro-processed-managed non-invasive ventilator. It was specially developed for the ventilation of premature and newborn infants who are particularly susceptible to lung disorders.

WILAflow Elite permits proximate pressure monitoring without affecting the mechanical dead space or lung compliance. The device ensures continuous, precise measurement of the patient's airway pressure.

Key product benefits at a glance:

- Fully automatic pressure setting
- Direct setting of oxygen concentration
- Precise oxygen concentration
- Innovative management of gas supply and pressure with iFlow
- Safe ventilator weaning with the modes NIPPV / NIPPV, NCPAP, HFNC
- Secure and reliable proximate pressure monitoring
- Active humidification of respiratory gas supply



Humidifiers

LM 2000

The LM 2000 is the new generation of active humidification systems developed for newborns, children and adults. The large touchscreen provides fast and convenient access to all required information and functions.

Key product benefits at a glance:

- Personalized, intuitive temperature setting
- Settable modes: Invasive, Non-invasive, Weaning
- Screen protector for night mode
- Automatic detection of water chamber
- Electronic water level monitoring
- Adjustable temperature and humidification settings



AIRcon Gen2

The humidifier Aircon Gen2 combines modern technology and innovative design in a single unit to satisfy medical needs and economic expectations of the market. The result is ideal physiologically conditioned air that protects the mechanically ventilated patient's mucous membranes from being dried out and prevents impairment of mucociliary clearance.

Key product benefits at a glance:

- Self-explanatory use provided by symbols and pictograms
- Stand-by function for required therapeutic applications
- Three (3) function modes (IV, NIV, FREE)
- Individual control of expiratory heater wire
- Suitable for use with all ventilators
- Distribution cable for hot wire sensors
- Intelligent alarm management
- Automatic water level monitoring
- Event and Alarm report



Oxygen Blenders

LM Blend

The new generation of high or low flow air-oxygen blenders

The compact, lightweight LM Blend permits personalized settings of oxygen concentration and flow without the use of additional accessories, such as a flowmeter. It is specially designed to function in any position and during transport. To measure oxygen concentration, the LM Blend is equipped with an optional port for connection to an oxygen measuring cell.



Maxblend 2

High-flow/low-flow air-oxygen blender

Maxblend 2 is an easy-to-use, low-maintenance blender with an integrated oxygen analyzer. Its features include a backlit LCD and acrylic flow meter, intelligent alarms and an optional AC power supply. The modular flow meters can be added to the configuration. The whisper-quiet operation enables bedside use without disturbing patient rest.

MaxVenturi

High-flow air-oxygen blender

MaxVenturi was specifically developed as a high throughput interface for air humidification systems. Using the proven Venturi principle, the device offers the option of mixing ambient air with medical oxygen.



MicroMax

High-flow/low-flow air-oxygen blender

MicroMax offers the performance of a precise air-oxygen blend. The high-flow variant has a total throughput range of 15-120 l/min. and the low-flow variant 3-20 l/min. MicroMax includes a connection port for continuous monitoring of the administered oxygen concentration with the optionally available oxygen analyzer.

Lifetherm 2000

Warming bed

The warming bed is available without cover, with closed cover or with a two-sided flip-top cover. It can be upgraded with a large selection of accessories.



Key product benefits at a glance:

- Effective heat transfer thanks to surface heating
- Precise electronic adjustment of the target temperature
- Display of the current temperature
- Infinitely adjustable electronic height setting (up to 30 cm) with foot switches on both sides*
- Gentle electrical tilting of the bed surface at the touch of a button (Trendelenburg and reverse Trendelenburg positions)
- Hinged side panels
- Two-sided flip-top or single-piece cover available
- Gel mattress
- Standard rails for mounting accessories such as catheter quiver, storage trays or suctioning accessories*
- Optimally designed for easy cleaning

* Optionally available

Lifetherm 2002/2003

Resuscitation unit

A range of resuscitation units with options for ideal adjustment to the current purpose, the needs of the infant, and the operating staff.



Key product benefits at a glance:

- Radiant warmer with integrated examination lamp
- Conductive heat provided by heated gel mattress¹
- Quiet electric height adjustment, operation from both sides (up to 30 cm)*
- Gentle electrical tilting of the bed surface at the touch of a button (Trendelenburg and reverse Trendelenburg positions)
- Hinged side panels available in different heights
- Skin temperature control and display (accuracy $\pm 0.1^{\circ}\text{C}$)**
- Two-sided flip-top or single-piece cover available for bed area*
- Sturdy rails for attaching trays and ventilator
- Standard rails for mounting accessories such as catheter quiver, storage trays or suctioning accessories*
- Designed for easy cleaning

¹ Gel mattress in conjunction with heated bed surface only
 * optional
 ** Lifetherm 2002 only

Isotherm



Radiant warmer

The radiant warmer **Isotherm** from Löwenstein was developed to keep changing tables warm and maintain the body temperature of infants.

Isotherm is equipped with an integrated halogen examination lamp and a ceramic heating element that generates invisible electromagnetic radiation which is very well absorbed by the infant's skin.

Key product benefits at a glance:

- Ceramic, oxidation-resistant heating element with integrated halogen examination lamp (glare-free)
- The reduced surface temperature has a moderate effect on the room temperature
- Controlled radiation intensity
- Even heat distribution
- Does not emit any visible infrared light (skin colour remains neutral)
- Available as a mobile stand or for wall or ceiling mounting



Isotherm - mobile stand



Isotherm - wall mounting



Isotherm - ceiling mounting

Phototherapy

bilibluelight

The new **bilibluelight** bilirubin lamp by Löwenstein Medical is an effective, modern phototherapy system for reducing serum bilirubin levels.

The user-friendly bilibluelight offers intuitive operation, high-quality design and low weight. It features powerful high-quality LEDs with a capacity of over 40,000 operating hours. The wavelength ensures maximum bilirubin reduction.

The compact, lightweight bilibluelight is perfectly suited for use in neonatal and pediatric wards. The light is available as a single-arm rod lamp on a rolling stand.

Key product benefits at a glance:

- High radiation intensity and ideal ultraviolet wavelength
- High-quality workmanship, made of sturdy aluminum and fiberglass-reinforced plastic
- Rolling stand optionally available



Sample applications with Lifetherm warming bed

eyemax²

eyemax² offers neonatal eye protection for UV phototherapy. Eyemax is available in three different sizes:

Micro
OFC 20 – 25 cm

Premature
OFC 26 – 32 cm

Regular
OFC 33 – 38 cm



Lighting Systems



VISIANO 20-2

Good lighting is essential to satisfy demands for visibility. VISIANO 20-2 is a true all-rounder in general medical practices, dermatology, ENT, gynecology and intensive care units for newborns and adults. With its unique design and state-of-the-art lighting technology, it provides high-quality lighting for ideal examination conditions.

Key product benefits at a glance:

- LED technology
- High illumination 60,000 lx/0.5 m, light field diameter 210 mm
- Precise color rendering Ra >95, R9 >90
- Four-level dimmer
- Antimicrobial hygiene function in key parts of the lamp
- Maximum action radius (360° rotation of the head)



VISIANO 10-1

VISIANO 10-1 is an LED examination lamp with high-quality professional lighting. In daily use, VISIANO 10-1 impresses users with its excellent illumination and large light field. The sturdy flexible arm ensures reliable positioning and a long service life. The closed design prevents contamination.

Key product benefits at a glance:

- LED technology
- Light field diameter 180 mm
- Illumination level of 50,000 lx/0.5 m
- Precise color rendering Ra >93
- Color temperature 4400 K
- Professional light quality thanks to unique diamond optics and premium LEDs. Lamp head can be rotated 280° with handle
- High-quality aluminium rods and durable friction joints

HX LED

The small and sturdy examination light HX LED is ideally suited for intensive care units, patient rooms and medical practices. The light meets all important criteria for safe and precise examinations. LED technology makes it particularly cost-effective.

Key product benefits at a glance:

- LED technology
- Light field diameter 300 mm
- Illumination level of 15,000 lx / 0.5 m,
- Precise color rendering Ra >95
- Color temperature 4000 K
- Rocker switch (1/0) on the lamp head
- Spring-mounted joint system or flexible arm
- Low heat emission in light field
- Designed to match mounting elements and rolling stands



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