

**LÖWENSTEIN**  
medical

**LUISA**

—  
Life support ventilation



 With people in mind



# Air for an active life. LUISA.

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Inhale, exhale – something most people do without giving it much thought. With LUISA, the new, highly efficient ventilator from Löwenstein Medical, ventilated patients can do the same. LUISA is especially mobile, compact and lightweight. It can be operated in a vertical or horizontal position and flexibly attached to a wheelchair or bed. The ventilator's battery has a run time of up to 18 hours, giving the user a larger radius of action and a good feeling of extra security. It's easy to operate LUISA via the 10-inch touchscreen and intuitive menu navigation. Other features simplify everyday use. LUISA provides the air needed for an active, mobile life and opens up brand new opportunities for users.

- **Battery run time** up to 18 hours
- **Display** 10-inch touchscreen
- **Positioning** vertical or horizontal
- **Connectivity:** LUISA App, prisma therapy software (pTS), monitor connection
- **Monitoring:**  $\text{FiO}_2$  and  $\text{SpO}_2$  measurement
- **Functionality:** ventilation up to 30 ml VT; High-Flow Mode, CPAP and MPV in all circuit systems
- **Safety:** alarm displayed in two languages
- **Uncomplicated:** no adapter, intuitive operation



## Technical data

|  |   |  |   |
|--|---|--|---|
| Product class to 93/42/EEC   | II b  | Mean sound pressure level/operation to ISO 80601-2-72  |   |
| Product standards  | EN ISO 80601-2-72: Ventilators for medical use – Part 2-72: Particular requirements for basic safety and essential performance of home healthcare environment ventilators for ventilator-dependent patients | <ul style="list-style-type: none"> <li>• at <math>\geq 500</math> ml</li> <li>• at <math>\geq 150</math> ml</li> <li>• at <math>\geq 30</math> ml</li> </ul> | 38,5 dB(A) $\pm 3$ dB(A),<br>sound power level 46.5 dB(A) $\pm 3$ dB(A)<br>37 dB(A) $\pm 3$ dB(A),<br>sound power level 45 dB(A) $\pm 3$ dB(A)<br>41 dB(A) $\pm 3$ dB(A),<br>sound power level 49 dB(A) $\pm 3$ dB(A)   |
| Dimensions W x H x D in cm   | 30 x 13 x 21  | IPAP pressure range  |   |
| Weight   | 3.8 kg  | <ul style="list-style-type: none"> <li>• Leakage circuit</li> <li>• Valve circuit</li> </ul>   | 4 cmH <sub>2</sub> O – 50 cmH <sub>2</sub> O<br>6 cmH <sub>2</sub> O – 60 cmH <sub>2</sub> O  |
| Temperature range  |   | Pressure range leakage system EPAP   | 4 cmH <sub>2</sub> O – 25 cmH <sub>2</sub> O  |
| • Operation:   | +5 °C to +40 °C   | Pressure range PEEP valve system   | 0 cmH <sub>2</sub> O – 25 cmH <sub>2</sub> O  |
| • Transport and storage:   | -25 °C to +70 °C  | Pressure range CPAP  | 4 cmH <sub>2</sub> O – 20 cmH <sub>2</sub> O  |
| Permitted humidity for operation, transport and storage  | Relative humidity 10% to 90%, no condensation 35 °C to 70 °C at a water vapor pressure up to 50 hPa   | Respiratory frequency, adult   | 2 – 60 bpm  |
| Modes  |   | Respiratory frequency, pediatric   | 5 – 80 bpm  |
| • Leakage system   | CPAP, HFT, S, ST, autoST, T, PSV, aPCV, PCV, P-SIMV, V-SIMV, MPVp, MPVv   | Ti min, Ti max, Ti timed   | 0.2 s – 4 s (pediatric)<br>0.5 s – 4 s (adult)<br>auto (Ti timed only)  |
| • Single-circuit with valve system   | CPAP, HFT, PSV, aPCV, PCV, aVCV, VCV, P-SIMV, V-SIMV, MPVp, MPVv  | Tidal volume   | 30 ml – 400 ml (pediatric)<br>100 ml – 3000 ml (adult)  |
| • Double-circuit system  | CPAP, HFT, PSV, aPCV, PCV, aVCV, VCV, P-SIMV, V-SIMV, MPVp, MPVv  | Trigger type   | Flow trigger  |
| Air pressure range   | 700 hPa to 1100 hPa, corresponds to an altitude of 3,000 m above mean sea level   | Trigger level  | auto  |
| Maximum air flow at 20 hPa   | > 220 l/min   | • Inspiration  | 1 (high sensitivity) to 10 (low sensitivity)  |
| Display size   | 10-inch touchscreen   | • Expiration   | 95% to 5% of maximum flow in 5% steps   |
| System interface   | 3 VDC/0.2 A<br>When connecting the prismaHub device: 24 VDC/0.2 A   | Speed of pressure increase adult   | Level 1: 100 cmH <sub>2</sub> O/s<br>Level 2: 80 cmH <sub>2</sub> O/s<br>Level 3: 50 cmH <sub>2</sub> O/s<br>Level 4: 20 cmH <sub>2</sub> O/s   |
| Power consumption on standby without battery charging<br>Screen brightness 90%   | 230 V AC / 0.07 A<br>48 V DC / 0.30 A<br>24 V DC / 0.61 A<br>12 V DC / 1.21 A   | Speed of pressure increase pediatric   | Level 1: 135 cmH <sub>2</sub> O/s<br>Level 2: 100 cmH <sub>2</sub> O/s<br>Level 3: 80 cmH <sub>2</sub> O/s<br>Level 4: 50 cmH <sub>2</sub> O/s  |
| Power consumption during ventilation without battery charging<br>Screen brightness 90%   |   | Speed of pressure increase MPV mode  | Level 1: 60 cmH <sub>2</sub> O/s<br>Level 2: 45 cmH <sub>2</sub> O/s<br>Level 3: 30 cmH <sub>2</sub> O/s<br>Level 4: 15 cmH <sub>2</sub> O/s  |
| Ventilation settings:  |   | Speed of pressure reduction (in leakage ventilation only) adult  | Level 1: 100 cmH <sub>2</sub> O/s<br>Level 2: 80 cmH <sub>2</sub> O/s<br>Level 3: 50 cmH <sub>2</sub> O/s<br>Level 4: 20 cmH <sub>2</sub> O/s   |
| Mode: T  |   | Speed of pressure reduction (in leakage ventilation only) pediatric  | Level 1: 135 cmH <sub>2</sub> O/s<br>Level 2: 100 cmH <sub>2</sub> O/s<br>Level 3: 80 cmH <sub>2</sub> O/s<br>Level 4: 50 cmH <sub>2</sub> O/s  |
| Configuration: Adult   |   | Tidal volume   | 30 ml – 3000 ml   |
| Leakage circuit, 15 mm   | 230 V AC / 0.18 A   | Minute volume (as measured over the previous five breaths)   | 30 ml – 3000 ml   |
| Additional accessories: Breathing system filter, WILAsilent exhalation system  | 48 V DC / 0.81 A  | Maximum permitted flow for oxygen supply   | 30 l/min  |
| IPAP: 40   | 24 V DC / 1.61 A  | Permitted pressure for oxygen supply   | < 1000 hPa (< 1bar)   |
| EPAP: 4  | 12 V DC / 2.86 A  | FiO <sub>2</sub> measurement range   | 21% – 100%  |
| F: 26.5  |   | HFT flow range adult:  | 5 – 60 l/min  |
| Ti: 1.1  |   | HFT flow range pediatric:  | 5 – 25 l/min  |
| Pressure increase: 1   |   | Fine filter  |   |
| Pressure reduction: 1  |   | • up to 1 $\mu$ m  | $\geq 99.5\%$   |
| Test lung bag  |   | • up to 0.3 $\mu$ m  | $\geq 85\%$   |
| Electrical connection, device maximum  | 48 V DC / 2.7 A<br>24 V DC / 5.4 A<br>12 V DC / 7.0 A   | Service life of fine filter  | about 250 h   |
| Power supply unit  |   | USB flash drive  | USB-C 3.1   |
| • Input voltage/maximum current  | 100 – 240 V AC, 2-1 A   | Settable alarms  | <ul style="list-style-type: none"> <li>• High leakage</li> <li>• Low pressure</li> <li>• High pressure</li> <li>• Apnea</li> <li>• Low volume</li> <li>• High volume</li> <li>• Low frequency</li> <li>• High frequency</li> <li>• Low minute volume</li> <li>• High minute volume</li> <li>• Low FiO<sub>2</sub></li> <li>• High FiO<sub>2</sub></li> <li>• Low SpO<sub>2</sub></li> <li>• High SpO<sub>2</sub></li> <li>• Low pulse</li> <li>• High pulse</li> <li>• High CO<sub>2</sub></li> <li>• Low CO<sub>2</sub></li> </ul> |
| • Input frequency  | 50 – 60 Hz  |  |   |
| • Output voltage/maximum current   | 48 V DC / 2,7 A   |  |   |
| Internal/external battery  |   |  |   |
| • Type   | Li-Ion  |  |   |
| • Nominal capacity   | 3200 mAh  |  |   |
| • Nominal voltage  | 29.36 V   |  |   |
| • Energy   | 93.7 Wh   |  |   |
| • Typical discharge cycles   | 500 charging cycles   |  |   |
| Operating hours of internal battery assuming following settings:<br>Double circuit, PCV mode,<br>f=20/min, Ti=1 s, PEEP=off, Vt=800 ml | $\geq 6$ hours  |  |   |
| Passive lung: Resistance R = 5 hPa/(l/s);<br>Compliance C = 50 ml/hPa  |   |  |   |
| Duration of complete battery charge  | < 6 hours   |  |   |
| Duration of 80% battery charge   | < 5 hours   |  |   |
| Classification to IEC 60601-1-11:  |   |  |   |
| • Class of protection against electric shock   | Protection class II   |  |   |
| • Degree of protection against electric shock  | Type BF   |  |   |
| • Protection against harmful ingress of solids and water   | IP22  |  |   |





# LUISA

## Accessories

|   |           |  |           |
|---|-----------|--|-----------|
| Bacteria and virus filter Teleflex Iso-Gard breathing system filter | WM 27591  | Cable, nurse call for LUISA<br>10 m            | LMT 31510 |
| FiO <sub>2</sub> measuring cell                                     | LMT 31502 | 30 m   | LMT 31520 |
| Exhalation valve  |           | CD-ROM with software prismaTS                  | WM 93331  |
| • Silentflow 3  | WM 25500  | USB flash drive                                | LMT 31414 |
| • WILAsilent  | WM 27589  | COM cable for Philips Intellivue Monitors      | LMT 31578 |
| Leakage circuit   |           | Set, 90° circuit adapter                       | LMT 15984 |
| • 15 mm Ø   | WM 29988  | SpO <sub>2</sub> sensor                        |           |
| • 22 mm Ø   | WM 23962  | • Size S                                       | LMT 31580 |
| • autoclavable, 22 mm Ø   | WM 24667  | • Size M                                       | LMT 31396 |
| • mouthpiece ventilation, 15 mm Ø                                   | WM 27651  | • Size L                                       | LMT 31388 |
| Single circuit  |           | Connecting cable Xpod SpO <sub>2</sub> sensor  | LMT 31593 |
| • 15 mm Ø   | LMT 31383 | Cable for CO <sub>2</sub> sensor               | LMT 31592 |
| • 22 mm Ø   | LMT 31382 | LUISA hospital trolley, consisting of:         |           |
| Double circuit  |           | • Trolley 2.0 (LMT 31355)                      |           |
| • 15 mm Ø   | LMT 31577 | • Set, LUISA plate for trolley 2.0 (LMT 31371) | LMT 31370 |
| • 22 mm Ø   | LMT 31581 | • Power supply holder (LMT 31351)              |           |
| Mobility bag  | LMT 31554 | • Water bag holder (LMT 31353)                 |           |
| Set, LUISA device plate   | LMT 31359 | • Fixing set for oxygen bottles (LMT 31352)    |           |
| Set, LUISA plate for trolley 2.0                                    | LMT 31371 | • Circuit holder (LMT 31354)                   |           |
| Mounting bracket for ISO rail                                       | LMT 31368 | LUISA homecare trolley, consisting of:         |           |
| Exhalation module   |           | • Trolley 2.0 (LMT 31355)                      | LMT 31360 |
| • disposable  | LMT 31404 | • Set, LUISA plate for trolley (LMT 31371)     |           |
| • autoclavable  | LMT 31413 | • Power supply holder (LMT 31351)              |           |
| External battery  | LMT 31540 | Trolley 2.0                                    | LMT 31355 |
| Charger for external battery  | LMT 31594 | • Power supply holder                          | LMT 31351 |
| VENTIremote alarm LUISA   |           | • Water bag holder                             | LMT 31353 |
| • 10 m  | LMT 31560 | • Fixing set for oxygen bottles                | LMT 31352 |
| • 30 m  | LMT 31570 | • Circuit holder                               | LMT 31354 |

## Scope of delivery

|                                      |                   |
|--------------------------------------|-------------------|
| <b>LUISA</b>                         | <b>31390-1110</b> |
| consisting of:                       |                   |
| LUISA basic device, LM150TD with HFT | LMT 31410         |
| Protection bag                       | LMT 31010         |
| Single circuit with valve, 22 mm Ø   | LMT 31382         |
| Oxygen connection nozzle             | WM 30669          |
| USB flash drive                      | LMT 31414         |
| Power supply unit                    | LMT 31569         |
| Power cord (power cable)             | WM 24177          |
| Set, 12 fine filters                 | WM 29652          |
| Set, 2 coarse dust filters           | WM 29928          |
| Instructions for use                 | LMT 68651         |
| Accessories bag                      | LMT 31579         |

Please refer to the current price list.

CE 0197



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