

MEDUMAT Standard²

A clear new perspective





MEDUMAT Standard²

Top-level safety in an emergency

Every second counts in an emergency. There is no room for error, especially when the patient needs assistance with breathing. Fast and correct action can save lives. The demands made on emergency medical services are high in such situations and easy operation of the ventilator is indispensable.



See for yourself: You see more

MEDUMAT Standard² offers a completely new view of modern emergency and transport ventilation. The display provides a clear, well-structured overview of all major respiratory parameters and optional ventilation curves. The familiar operation, e.g., for patient selection, makes intuitive use possible and the initiation of ventilation via entry of the patient's height ensures a simple and guideline-compliant start to ventilation treatment. Clearly organized operating elements and symbols, plus effective acoustic and visual alarms are additional details that ensure the highest level of safety.

New Perspectives: More functions for EMS

MEDUMAT Standard² also offers clearly better perspectives for flexible use. The integration of a robust flow measurement with sidestream capnography and the presentation of curves in the display provide ideal monitoring of the patient. With optionally available ventilation modes, MEDUMAT Standard² can be adjusted to any circumstances and users. In addition to IPPV, the device is equipped with CPR (for Cardiopulmonary Resuscitation), RSI (for rapid sequence induction), Demand and CPAP (optionally with ASB). Users also can activate the optional volume-controlled modes SIMV, S-IPPV and inhalation and the pressure-controlled modes PCV, aPCV, BiLevel + ASB and PRVC + ASB, and a CO₂ monitoring mode. All settings are based on current requirements such as the ERC Resuscitation Guidelines. Settings can be customized upon request.

A step ahead: Emergency ventilation today

Ventilation today can be intuitive and simple. In pre-hospital treatment, during the transport of ventilated patients, in the emergency or trauma room, the ergonomic and simple operation of MEDUMAT Standard² set a new standard for therapeutic safety. This user-friendly perspective on emergency and transport ventilation is unmatched.

Your benefits at a glance

- Quick and easy access to the right ventilation with entry of height or via emergency mode for adults, children and infants
- CPR mode for guideline-compliant Cardiopulmonary Resuscitation
- RSI mode for reliable support with induction of anesthesia
- CPAP mode with optional pressure support ASB for non-invasive therapy in pre-hospital treatment
- Optional: Sidestream capnography for ideal monitoring of ventilation treatment
- Optional: Flow measurement for improved monitoring during ventilation, resuscitation or induction of anesthesia (Mve, Vte, ftotal, fspont, Vleak), Curve display
- Optional: pressure-controlled ventilation modes for differentiated ventilation therapy

More than Pure Ventilation

MEDUMAT Standard² in real-life use

Classic emergency ventilators guarantee continuous ventilation. MEDUMAT Standard² can do much more. Special modes meet the newest requirements in emergency medicine. CPAP, for example, leads to a better patient outcome* for certain clinical conditions while RSI and CPR optimize treatment procedures. Ventilation with CPR and RSI modes offers many advantages over conventional „bag-valve-mask“ application. Capnography and the optional Flow measurement + ASB assist the user with the mechanical ventilation alternative.



Transport ventilation lightened up

MEDUMAT Standard² is suitable not only for emergency ventilation, but also for ideal care during transport of an already ventilated patient. It is the smallest and lightest transport ventilator in its class. Equipped with pressure-controlled ventilation modes, monitoring options such as pressure, flow and CO₂ curves and the display of major ventilation parameters, MEDUMAT Standard² is your compact partner for ground and air rescue services.

*Sources:

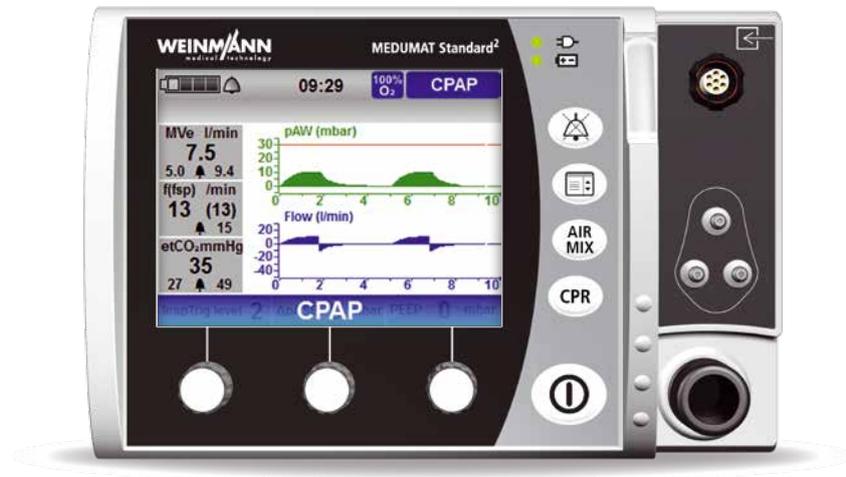
Thompson, J. et al.: Out-of-hospital continuous positive airway pressure ventilation versus usual care in acute respiratory failure: a randomized controlled trial. In: Annals of emergency medicine 52 (2008), Nr. 3, S. 232-241

German Respiratory Society e.V. (pub.): S3 Guidelines: Non-Invasive Ventilation as Treatment of Acute Respiratory Insufficiency. Hanover, 2008

Your benefits at a glance

- Low weight of 2.5 kg makes device suitable for ground and air rescue services
- Rechargeable battery capacity of up to 10 hrs
- Simple, intuitive operation despite wide range of functions
- Optimum setting and monitoring of ventilation by means of the options Flow measurement + ASB, capnography and pressure-controlled ventilation modes
- Customization of device with pre-configuration of ventilation parameters

CPAP Mode



Non-Invasive Ventilation

The proven CPAP mode** allows the patient to breathe spontaneously at an elevated pressure level, e.g., during treatment of cardiac pulmonary edema. With MEDUMAT Standard² the CPAP pressure can be finely adjusted at any time. The user also has the option of activating pressure support ASB with settable trigger. During Non-Invasive Ventilation too, the optional volume and CO₂ monitoring supplement other available information.

Any leakage at the mask is detected and compensated for by the device. All ventilation parameters can be adjusted over the monitor while the patient is being ventilated.

Your benefits at a glance

- Fast and exact setting of CPAP pressure
- Pressure support ASB optionally available
- Apnea ventilation
- 100 % oxygen or AIR MIX



Option Flow measurement + ASB

- Monitoring of expiratory tidal and minute volume and respiratory rate
- Pressure support in CPAP and SIMV modes to provide ideal assistance in Non-Invasive Ventilation
- Customized setting of inspiration trigger and expiration trigger

FlowCheck Sensor

- Particularly robust during use and in hygienic reprocessing
- Available as disposable or reusable variants
- Chip technology ensures top precision
- Low dead space of only 9 ml suitable for children and adults

**Sources:

Williams, B. et al.: When pressure is positive: a literature review of the prehospital use of continuous positive airway pressure. In: Prehospital and disaster medicine 28 (2013), Nr. 1, S. 52-60

Peter, J.V. et al.: Effect of non-invasive positive pressure ventilation (NIPPV) on mortality in patients with acute cardiogenic pulmonary oedema: a meta-analysis. In: Lancet 367 (2006), Nr. 9517, S. 1155-1163

S3 Guidelines: Non-Invasive Ventilation as Treatment of Acute Respiratory Insufficiency. Hanover, 2008



CPR Mode



Cardiopulmonary Resuscitation

MEDUMAT Standard² reliably guides you through Cardiopulmonary Resuscitation. After the quick entry via the CPR button and selection of the patient group, the metronome indicates the guideline-compliant rate for chest compressions. An increasingly louder acoustic signal from the metronome warns of an upcoming ventilation pause. Ventilation can be triggered in quickly changable algorithms of 30:2, 15:2 or continuously using by the ergonomic MEDUtrigger situated close to the patient. All critical information, e.g., when the patient was last ventilated, duration of CPR, is visible on the monitor. To eliminate ventilation-induced artefacts, the user can interrupt ventilation during the cardiac rhythm analysis by selecting the pause field. MEDUMAT Standard² is ideally suited for use with the monitor/defibrillator MEDUCORE Standard. With the optional etCO₂ display, emergency medical personnel are provided with an important parameter for the quality of resuscitation and intubation. That's a real plus for patient safety.

Your benefits at a glance

- Mask securely held in place with two hands
- Constant, patient-specific tidal volume
- Use of 100 % oxygen, can be reduced upon ROSC
- Adjustable pressure limit for each patient
- Reliable alarm functions (e.g., when mask leaks)
- Visual monitoring via pressure display
- Integrated time information
- Ventilation interrupted during defibrillator's analysis phase
- User can configure CPR mode (e.g., metronome ON/OFF, metronome frequency, algorithm)
- Optional: etCO₂ monitoring to check tube position



Press CPR button to activate CPR mode

- CPR mode is activated at the press of a button
- Ensures use within seconds
- Clear setup for successful CPR



Manual ventilation with MEDUtrigger and Double-C grip

- Rhythm selection of 15:2 or 30:2
- Two hands free for ventilation and complete control of mask with Double-C grip
- Simultaneous simple and ergonomic manual triggering with the thumbs



Continuous ventilation

- Reliable check of tube position via display of etCO₂
- Automatic setting of tidal volume and ventilation rate by means of pre-set patient height



Manual interaction with defibrillator

In the cardiac rhythm analysis phase:

- Ventilation pause via selection of the pause field
- Ventilation pause eliminates motion and thus permits an artefact-free analysis

During shock delivery:

- Low impedance of thorax for more effective shock delivery from defibrillator
- No oxygen enrichment of ambient air





RSI Mode

Reliable support with rapid sequence induction

In RSI mode MEDUMAT Standard² reliably supports every treatment step. First the preoxygenation of the patient occurs via the DEMAND function. The operator can see the anesthesia-induced apnea on the monitor. MEDUtrigger allows temporary manual ventilation of the patient so that access to the airways can be checked. Then a switch can be made at any time to the pre-set parameters for controlled ventilation. The adjustable pressure limit assures the safety of the patient in every situation. CO₂ monitoring lets the user check the position of the tube, a feature that further enhances patient safety.



Preoxygenation

- Supply of 100 % oxygen for the spontaneously breathing patient
- Reliable monitoring of spontaneous breathing by means of volume and frequency monitoring (optional)
- Reliable alarms for prolonged apneic phase



Manual triggering of ventilator breath with MEDUtrigger

- In an emergency the patient can be manually ventilated with use of Double-C grip and MEDUtrigger



Position check of tube

- After successful intubation, the user can check the position of the airway access with MEDUtrigger and the etCO₂ measurement
- After a position check, the device can be switched to continuous ventilation at the press of a button

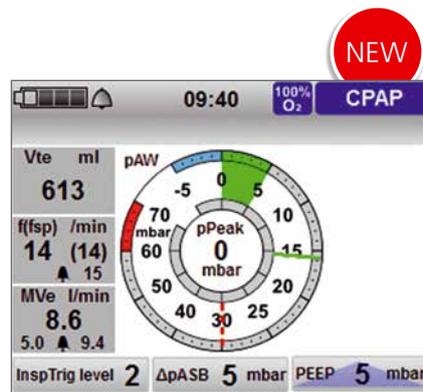
Your benefits at a glance

- Assistance with all ventilation measures
- Preoxygenation with 100 % oxygen
- Visualization of (uninterrupted) spontaneous breathing
- Optional: Oversee spontaneous breathing with volume monitoring
- Ventilation with MEDUtrigger for tube position check or in an emergency for mask ventilation
- Adjustable pressure limit
- Switch to volume-controlled or pressure-controlled ventilation
- Optional: Monitoring of etCO₂ parameters for reliable check of intubation



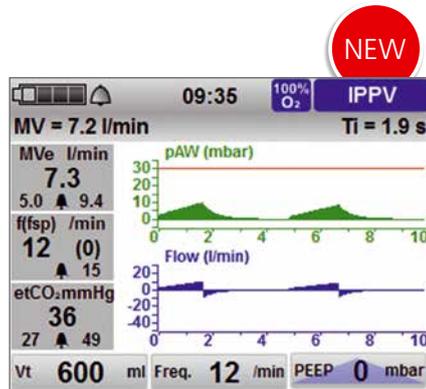
More Freedom with More Options

MEDUMAT Standard² offers more flexibility than ever. The number of functions has been significantly increased. The device can be specifically configured to meet your needs.



Option Flow measurement + ASB

- Monitoring of expiratory tidal and minute volume and respiratory rate
- Pressure support in CPAP and SIMV modes to provide ideal assistance with Non-Invasive Ventilation
- Individual settings of inspiration and expiration triggers

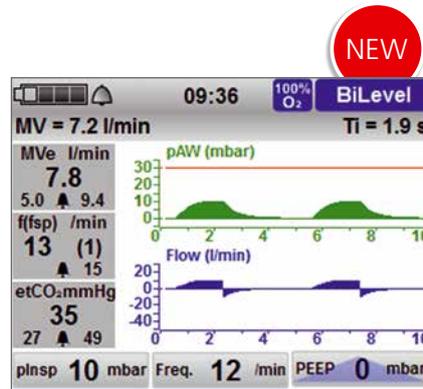


Option Curve display

Requirement:

Option Flow measurement + ASB is installed!

- Display of pressure and flow curves help you monitor the patient

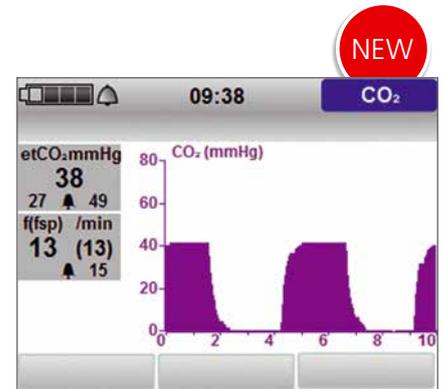


Option Pressure-controlled ventilation modes

Requirement:

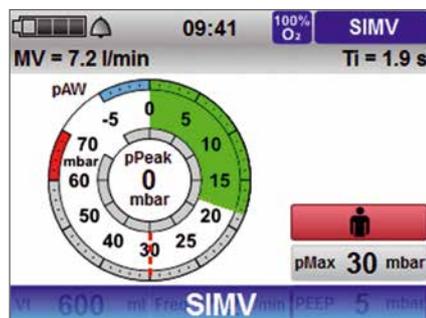
Option Flow measurement + ASB and Option Curve display are installed!

- Transport of ventilated patients improved with use of ventilation modes PCV, aPCV, BiLevel + ASB and PRVC + ASB
- Clearly structured monitoring by the display of pressure and flow curves



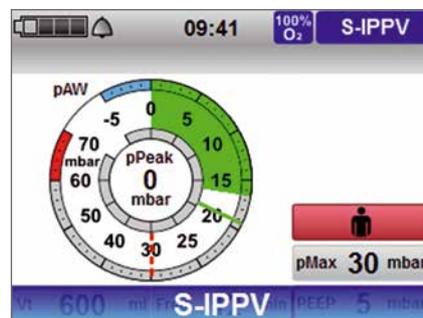
Option Capnography

- Display of end-tidal CO₂ as numeric value and as curve
- Improved monitoring of ventilation treatment and assistance with CPR and RSI
- CO₂ measurement without currently administered ventilation



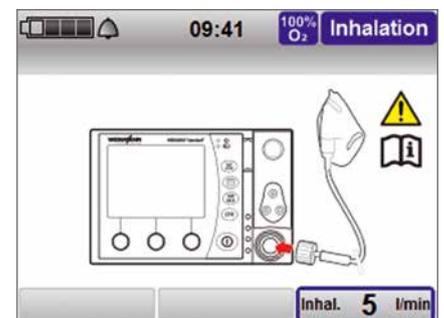
SIMV mode

- Use this mode to synchronize the patient's spontaneous breathing efforts with MEDUMAT Standard²



S-IPPV mode

- MEDUMAT Standard² responds to every spontaneous breathing effort with a mandatory ventilator breath



Inhalation mode for every response

- Can be used with standard inhalation interfaces
- Precise settings of 1 to 10 liters of oxygen per minute
- Rapid switch to CPAP mode or invasive ventilation when inhalation is no longer sufficient

Service directly from the Manufacturer



Remote diagnosis (Telesupport) Safety and reliability day after day

With the fast and simple function check, you can assure yourself at any time that your device is trouble-free and ready for use. In less than 30 seconds MEDUMAT Standard² conducts the automatic function check and provides the user with a status report. When a device malfunction occurs, its cause may not be immediately apparent. For reporting purposes, MEDUMAT Standard² lets you store the service files from the device on an SD card and send the files to our service specialists via e-mail. Ideally, the service files will be enough to allow the service technicians to resolve the problem with you via telesupport.

Make software updates yourself – Your benefits as operator

- Always up-to-date with the newest software
- You decide when to update – no deadline pressure, no waiting
- Remain ready for use – no need to ship device for update
- You decide who makes the update at your site, thanks to password-protected operator menu
- No risk – making the update is simple and safe

Active support of your quality management and documentation processes

Important information is automatically saved and quickly and easily made available for export from the SD card. Data include:

- Up to 6,000 function checks, including many details
- Software update history in a documentation sheet
- Error-free standardization: Customized device configurations can be transferred via SD card from one device to another

Service data: MEDUMAT Standard²

Manufacturer's warranty	two years
Maintenance interval	every two years
Automatic function check with brief summary	✓
Time for function check	about 30 seconds
Software update can be made by operator/user	✓
User training without O ₂ consumption (Free simulation software in the device/on PC)	✓
Password-protected operator menu	✓
Removable rechargeable battery system ⁽¹⁾	✓
Battery status	Display on battery itself
Telesupport	✓
External charging unit for removable battery	optionally available
Service reminder in device display	e.g., scheduled maintenance

(1) You can use the removable rechargeable battery for both MEDUMAT Standard² and MEDUCORE Standard to simplify your logistical processes and device handling during use.

Never miss a safety check again

MEDUMAT Standard² gives you reliable help with the planning of required maintenance. Every device reminds you in good time of due maintenance dates. At the end of the function check, the device tells the user the exact date of the upcoming maintenance. If the recommended interval is exceeded, MEDUMAT Standard² displays a small screwdriver symbol on the start-up screen. With these reminders, MEDUMAT Standard² assists you with your responsibility as device operator.



Manufacturer's service
Hotline: +49 40 88 18 96 122

Intuitive Operation for Greater Safety



1. Ideal monitor layout

for best view of all measurements and settings

2. Easy access to all connections on device front

for MEDUtrigger and connection cable to FlowCheck sensor

3. Optional device input filter

filters the drawn-in ambient air

4. Storage & Updates

You can store data and make software updates yourself with the help of the SD memory card

5. User-friendly operation

quick operation of function keys for simple and fast use

6. Connection for ventilation hose

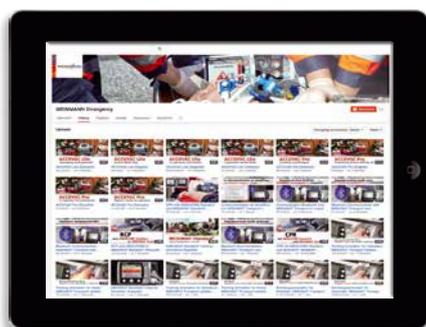
connects the device to the patient hose system

7. Connection for measurement hose

measures pressure and CO₂ and manages PEEP

8. Li-ion removable rechargeable battery

with operating time of up to 10 hours



MEDUMAT Standard² Videos

Learn about MEDUMAT Standard² at:
weinmann-emergency.com/downloads/multimedia



LIFE-BASE Portable Systems



1. LIFE-BASE 3 NG

robust portable system with accessory bag for storage and transport of required accessories

2. MEDUCORE Standard

Defibrillator/Monitoring system, component for LIFE-BASE portable system

3. MEDUMAT Standard²

Ventilator, component for LIFE-BASE portable system

4. Oxygen cylinder

Cylinder for up to 400 liters of oxygen

5. OXYWAY pressure reducer

with and without oxygen inhalation (up to 15 l/min)

6. MEDUtrigger

to manually trigger a ventilator breath in CPR mode or RSI mode



Portable system LIFE-BASE light XS

Your mobile solution if you can do without wall mounting systems, accessories and combinations with other devices
WM 9895



Portable system LIFE-BASE 1 NG XS

Less is more. Professional ventilation and ideal storage space if you can do without the combination with other devices, but still use a WEINMANN Emergency wall mounting BASE-STATION
WM 9870



Portable system LIFE-BASE 1 NG XL

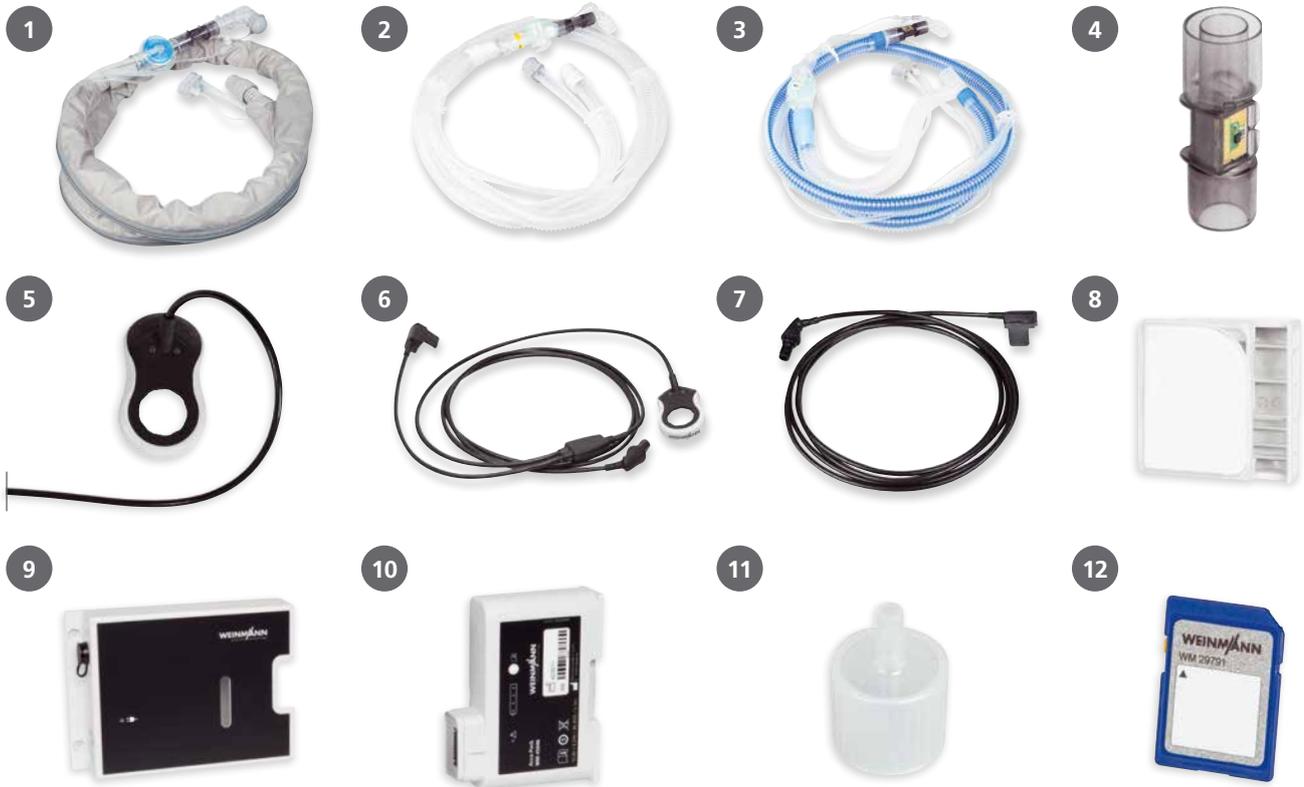
Your mobile system if you want to mechanically ventilate patients with an external oxygen source
WM 9400
(WM 9405 with MEDUCORE Standard Pro)



Portable system LIFE-BASE 3 NG with oxygen cylinder

Your mobile system if you need direct access to your oxygen cylinder
WM 9410
(WM 9415 with MEDUCORE Standard Pro)

Accessories and Replacement Parts



Reusable patient hose system without flow measurement, without CO ₂ measurement, 2 m	WM 28860	4. Reusable FlowCheck sensor	WM 28835
Disposable patient hose system without flow measurement, without CO ₂ measurement, 2 m	WM 28865	5. MEDUtrigger, 2 m	WM 28992
Reduced dead space disposable patient hose system without flow measurement, without CO ₂ measurement, 2 m	WM 28867	6. Connection cable to FlowCheck sensor with MEDUtrigger, 2 m	WM 32508
Reusable patient hose system with flow measurement, without CO ₂ measurement, 2 m	WM 29197	7. Connection cable to FlowCheck sensor without MEDUtrigger, 2 m	WM 32506
Disposable patient hose system with flow measurement, without CO ₂ measurement, 2 m	WM 29195	8. Device inpur filter	WM 28745
Reduced dead space disposable patient hose system without flow measurement, without CO ₂ measurement, 2 m	WM 29194	9. Battery charging station 100-watt power supply	WM 45190
Reusable patient hose system without flow measurement, with CO ₂ measurement, 2 m	WM 28905	10. Battery	WM 28937
Disposable patient hose system without flow measurement, without CO ₂ measurement, 2 m	WM 28907	11. Inhalation adapter	WM 45045
Reduced dead space disposable patient hose system without flow measurement, with CO ₂ measurement, 2 m	WM 28904	12. SD card	WM 28263
1. Reusable patient hose system with flow measurement, with CO ₂ measurement, 2 m	WM 29190		WM 29791
2. Disposable patient hose system with flow measurement, without CO ₂ measurement, 2 m	WM 29192		
3. Reduced dead space disposable patient hose system with flow measurement, with CO ₂ measurement, 2 m	WM 29199		

Software Options:

Option Flow measurement + ASB	WM 28959
Option Curve display	WM 28963
Option Pressure-controlled ventilation modes	WM 28970
Option SIMV mode	WM 28916
Option S-IPPV mode	WM 28915
Option Inhalation mode	WM 28920

Technical Data



MEDUMAT Standard²

Device dimensions	W: 206 mm x H: 137 mm x D: 130 mm
Weight, including battery	about 2.5 kg
Product classe according to Directive 93/42/EEC	IIb
Operating conditions	<ul style="list-style-type: none"> • Temperature range: -18° C to +50° C • Humidity: 0 % RH to 95 % RH without condensation • Air pressure: 540 hPa bis 1100 hPa • Altitude above sea level: to 5000 meters
Rechargeable battery	<ul style="list-style-type: none"> • Operating time: up to 10 hrs (depending on device and options) • Charging time (0% - 95%): 3.5 hrs
Display	TFT color display 5-inch
Data storage	Internal and on SD card
Ventilation modes	<ul style="list-style-type: none"> • Volume-controlled: IPPV, CPR, RSI, SIMV (with Option SIMV mode), SIMV + ASB (with Options SIMV mode and Flow measurement + ASB), S-IPPV (with Option S-IPPV mode), Inhalation (with Option Inhalation mode) • Pressure-controlled: PCV, aPCV, BiLevel + ASB, PRVC + ASB (with Option Pressure-controlled ventilation modes) • Spontaneous breathing: CPAP, CPAP + ASB (with Option Flow measurement + ASB)
Operating gas	Medical-grade oxygen or concentrator oxygen (93 % O ₂)
Operating pressure range	2.7 bar to 6 bar
Monitoring	<ul style="list-style-type: none"> • Displayed measurements: pPeak, pPlat, pMean, Vte, MVe, f, fsp, Vleak (with Option Flow measurement + ASB), etCO₂ (with Option Capnography) • Curves: Airway pressure (with Option Curve display or Option Capnography), Flow (with Option Curve display), CO₂ (with Option Capnography) • Gauge: pressure gauge
Maximum outlet flow	80 l/min at input pressure of 4.5 bar in Air Mix and in non-Air Mix operation
Ventilation rate	5 min ⁻¹ to 50 min ⁻¹
Inspiration pressure	3-60 mbar (with Option Pressure-controlled ventilation modes)
Pressure support ASB	0-30 mbar (with Option Flow measurement + ASB)
Inspiration trigger	3 levels (with Option Flow measurement + ASB)
Expiration trigger	3 levels (with Option Flow measurement + ASB)
I:E	1:4 - 4:1 (with Option Pressure-controlled ventilation modes)
Tidal volumes	50 ml to 2000 ml
Pressure limit (Pmax)	10 mbar to 65 mbar
PEEP	0 mbar to 30 mbar
Standards used	EN 60601-1, EN 1789, EN 794-3, ISO 10651-3, RTCA DO-160 G

Simply Professional

WEINMANN Emergency is a family-owned, internationally active medical technology company. With our mobile system solutions for emergency, transport and disaster medicine, we set standards for saving human lives. In close collaboration with professional users in emergency medical services, hospitals and armies, we develop innovative medical products for ventilation and defibrillation. For more than 100 years we have offered our customers a high degree of reliability, extensive experience and quality made in Germany.

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