caelus LITE

Anaesthesia ventilator

medec

Future technology, available today

Anaesthesia & critical care equipment – made in Belgium

a smart choice.

caelus LITE

a smart choice.

- ✔ Modular platform
- ✔ Optimal space allocation
- ✔ Made by Medec Benelux, Belgium

Reliability

Patient safety

Cost efficiency

Caelus Lite is an ideal solution for optimal space allocation in your operating room. Its reduced footprint combined with the integrated working surface results in a remarkably compact anaesthesia ventilator. At the same time its cutting-edge technology makes for a modular platform, which can be upgraded to support the most demanding anaesthetic procedures.

The innovative *PureTouch®* user interface and the 18.5” touchscreen expedite the workflow through an unprecedented user-friendliness. Advanced ventilation modes such as PRVC or VVV are available in an optional software package, as well as gas analysis and monitoring the depth of anaesthesia (qCON – qNOX module).

Caelus Lite is also available for pendant systems.

Future technology, available today

User-friendly

PureTouch® user interface

Medec *Puretouch®* allows you to swipe from one waveform to another in a fluent motion and to browse through settings effortlessly with an unprecedented simplicity and visual acuity. Thanks to the smooth and responsive graphics, changing parameters was never easier. The 18,5 inch full-colour touchscreen controls the gas mixer (*RotaSphere®*) and displays all ventilation parameters. The user interface can be easily configured, without the need to use any rotary knob. All changes are effected directly on the display by the touch of a finger. *(Medical mouse connection for screen control also available)*

Simplified ventilation

MANUAL SPONTANEOUS	*= MAN, SPONT, HLM*	
VOLUME CONTROL	*= VCV*, SIMV-VC*, VVV*, S-VVV*, PRVC, S-PRVC, HLM*	
PRESSURE CONTROL	*= PCV, SIMV-PC*	
PRESSURE SUPPORT	*= PSV/CPAP*	**D^FLOW available*

Choosing a ventilation mode was never faster. To improve your workflow the cryptic list of abbreviations is reduced to a strict minimum, without compromising functionality. A wide range of ventilation modes is now available in just four menus: manual / spontaneous, volume control, pressure control and pressure support. Adjust the parameters within volume control and pressure control to expand each mode's functionality, without the need to switch between modes. (S-)PRVC and (S-)VVV are available as an option.

Ergonomic design

The ergonomic design offers an ideal balance between working surface and footprint. Caelus Lite is a very compact anaesthesia ventilator with an integrated working surface. You can accommodate documents or keep necessary equipment at close hand during the entire procedure. A tactile APL valve is neatly integrated into the working surface on the patient side. Other mechanical controls are easily accessible in the same vicinity. A horizontal side rail is also provided to mount additional equipment alongside the working surface. Caelus Lite supports an efficient workflow in a compact operating theatre.

A future-proof platform:
8 years of free software updates

a smart choice.

Lung protection

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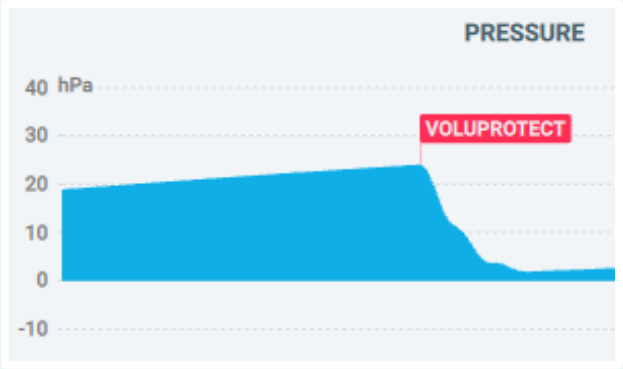
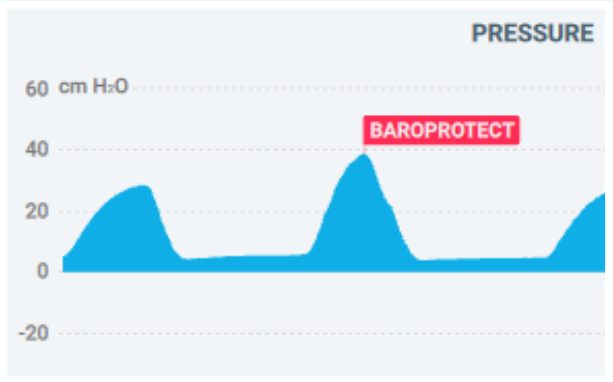
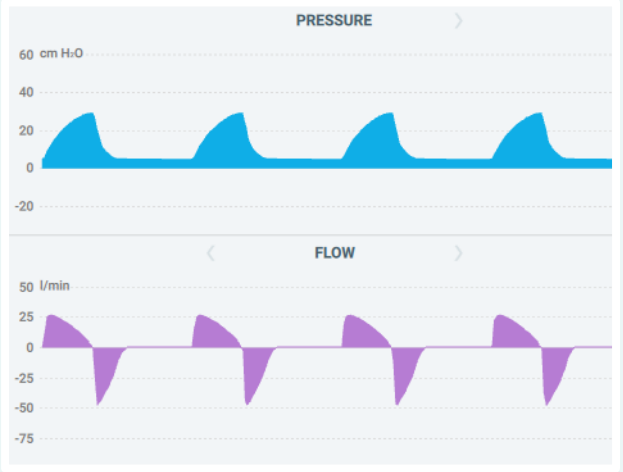
VoluProtect® reduces the risk of ventilator-induced lung injury during manual or spontaneous ventilation. Clinical research has shown that sustained lung pressure at a critically high level can cause irreversible damage to lung tissue. *VoluProtect®* is designed to prevent this and to improve patient outcome. It effectively prevents volutrauma by reducing the lung pressure automatically in case of an inadvertently closed APL valve.





BaroProtect® reduces the risk of ventilator-induced lung injury during volume-controlled ventilation. It effectively prevents barotrauma by limiting unexpected pressure spikes (e.g. due to changing lung compliance). At the same time, a full breathing cycle is completed without any risk of barotrauma. *BaroProtect®* assesses each individual patient's respiratory functionality to determine the pressure level at which it is activated automatically.

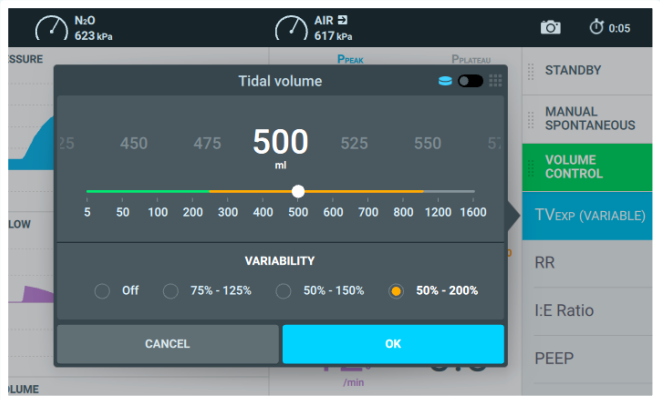
D^FLOW^ provides a decelerating flow pattern in volume-controlled ventilation. A decelerating flow provides a more desirable result in volume control. It reduces the risk of barotrauma at the end of inhalation. It improves patient-ventilator synchrony for patients requiring a high flow at the start of inhalation. And it allows for a more efficient oxygenation by delivering a larger part of the volume at an earlier stage of the inspiratory phase. In short, *D^FLOW^* makes volume-controlled ventilation a safer option.



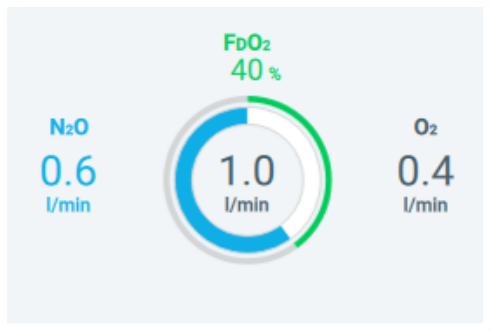
Innovation

Variable Volume Ventilation

There is increasing preclinical evidence that mimicking the physiological variability in tidal volume is a new method to facilitate lung recruitment and reduce the risk of ventilator-induced lung injury. That is why in Medec's volume control the tidal volume can be set with a degree of variability of 75 - 200 percent. These random breath-to-breath variations in tidal volume allow you to mimic spontaneous breathing during mechanical ventilation. VVV is available as an option.



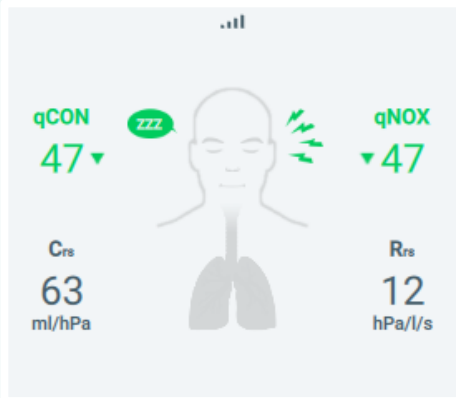
RotaSphere®



For decades anaesthesiologists used to work with the classic rotameter tubes. Since new technologies create new possibilities Medec has launched a new approach called *RotaSphere®*. Fresh gas flow settings are displayed in the form of a sphere. This allows immediate visibility of the carrier gas, set flows and O_2 concentration, even from a distance. Simply tap the sphere to adjust the settings in a fluent motion. If you prefer a more conservative approach, the classic rotameter tubes are still available.

Level of hypnosis / nociception

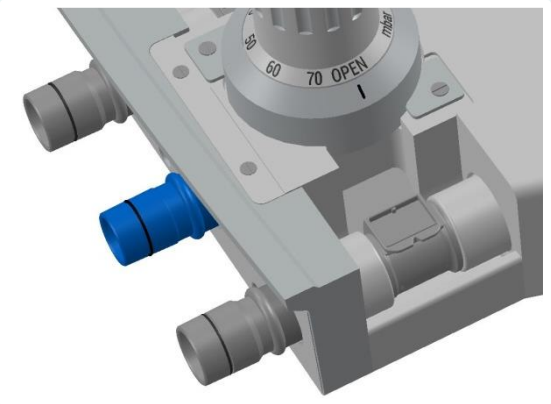
The *qCON-qNOX* module (option) allows you to measure the depth of anaesthesia and the level of nociception (response to pain stimulus). *qCON* monitors consciousness (EEG and EMG) and allows you to tailor the hypnotics to each individual patient, providing improved patient outcome and reduced costs. *qNOX* monitors nociception during general anaesthesia. When using both consciousness and nociception monitoring, hypnotics and analgesics can be dosed more accurately, reducing PONV and length of stay in post-operative care units.



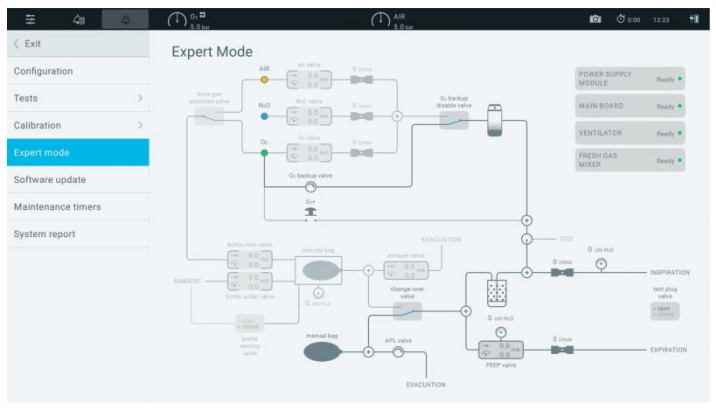
Cost-efficiency

Durable flow sensors

The digital flow sensors measure the flow rate with superb accuracy (thermal measurement principle) and show superior performance at low flow. Every sensor is digitally calibrated during production. As a result the sensor chip is always fully calibrated and temperature-compensated. The flow sensors can be autoclaved (134°C) and reused during the entire life cycle of the unit. A 5-year warranty on the flow sensors guarantees an unequalled cost-efficiency. Medec's flow sensors can reduce the cost of ownership by up to 30%.



Service-friendly



A full diagnostics check is performed at start-up. Calibration procedures are performed automatically. Diagnostic tools like 'Expert Mode' enable additional component testing without the need for special equipment. The ergonomic design of the pneumatic architecture makes for a more accessible platform and the detailed 'Event Log' supports efficient troubleshooting.

A future-proof platform

Join the Software Update Programme and enjoy free software updates for a period of eight years. Rest assured that your anaesthesia ventilator will be kept up-to-date as new software features become available. The Software Update Programme ensures a future-proof platform, capable of incorporating future software developments. This makes Caelus Lite an ideal solution for your operating theatre for the next decade and more.

Technical Data

caelus LITE

Operational characteristics	
Weight	110 kg, basic equipment
Dimensions (HxWxD)	138.5 (54.5“) x 63.7 (25.1“) x 71.8 (28.3“) cm
Display type	TFT full-colour capacitive touchscreen
Diagonal size	46.9 cm (18.5”)
Writing surface (HxWxD)	87.4 (34.4“) x 47.1 (18.5“) x 40.0 (15.7“) cm
Number of drawers	2
Mains power	100 - 240 V, AC 50 - 60 Hz
Battery time	≥ 90 minutes, typically 180 minutes (new, fully charged battery)
Aux. power outlets	1x EU/UK/US + 4x IEC-C13
Environment	
Temperature	10 - 40°C (50 - 104°F)
Atmospheric pressure	700 - 1060 hPa (525 - 795 mmHg)
Humidity	20 - 80% (non-condensing)
Fresh gas delivery	
Fresh gas flow	0.1 - 30 l/min
Delivery type	Non-decoupled
O_2 flush	Approx. 35 l/min
Backup O_2 flow	0 - 15 l/min
Smart ORC	≥ 25% O_2 in N_2O; 100% O_2 if ≤ 250 ml
Aux. O_2 flow meter	0 - 15 l/min (option)
Common Gas Outlet (CGO) *(for semi-open breathing system)*	
Connection fresh gas outlet	22 mm OD, 15 mm ID
External connections	
Serial ports	2x 9 pole D-sub connector
USB ports	1x (trolley), 2x (monitor)
Network port	1x RJ45
Data management	HL7 compatible (option)
Ventilator *(pneumatically driven, electronically controlled)*	
Ventilation modes	MAN, SPONT, VCV, SIMV-VC, PCV, SIMV-PC, PSV/CPAP, HLM
Optional ventilation modes	VVV, S-VVV, PRVC, S-PRVC
Flow pattern in VC	constant flow or decelerating (D^{FLOW})
Patient type	Neonates, infants, adults
Tidal volume	5 - 1600 ml
Peak pressure	4 - 70 cmH_2O / mbar / hPa
Pressure limitation	0 - 99 cmH_2O / mbar / hPa
Pressure support	0 - 50 cmH_2O / mbar / hPa
PEEP/CPAP	Off, 1 - 30 cmH_2O / mbar / hPa
Respiratory rate	2 - 100 /min
Backup rate in PS	Off, 2 - 60 /min
Backup pressure in PS	4 - 70 cmH_2O / mbar / hPa
I:E ratio	4:1 - 1:10
Rise time in PC	slow / medium / fast
End flow in PS	50 - 5 %
Inspiratory pause in VC	0 - 60 %
Trigger (flow/pressure)	Off, 0.2 - 10 l/min or 0.4 - 10 cmH_2O
Trigger window	5 - 50 %
Variability in VC	75 - 125 %, 50 - 100 %, 50 - 200 %
Gas module *(sidestream sampling)* (option)	
Operating principle	Paramagnetic (O_2), Infrared spectrometry (CO_2, N_2O, AA)
AA measurement	Auto-ID + Dual Agent-ID

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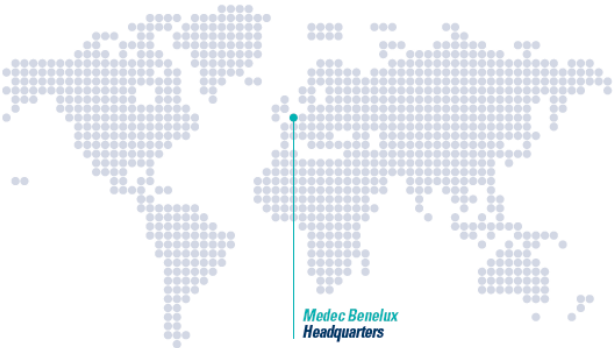
Your local distributor



Made in Belgium, the heart of Europe

bsi. ISO 13485 Medical Devices Quality Management

bsi. ISO 9001 Quality Management

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