



*Multi-Mode, Touch-Screen
Infant Ventilator*

SLE6000



When the smallest thing matters





Ventilate with Confidence

The care of infants and in particular neonates is hugely challenging. Their unique physiological and developmental needs require specialised, precise treatment. Nobody is more aware of this than SLE, having focused solely on the design and manufacture of infant ventilators since the 1980s.

When you buy one of our ventilators you can be sure it's optimised for infants - without compromise. You can also be sure it will keep pace with the ever changing needs of babies - whilst being safe, reliable and easy to use.

The SLE6000's specialist lung-protective features include SLE's own High Frequency Oscillation Ventilation (HFOV) using proprietary bidirectional jets, Pressure Support Ventilation (PSV), Volume Targeted Ventilation (VTV) and a choice of non-invasive ventilation modes (NIV) including High Flow Therapy.

The SLE6000 sees the introduction of the new Lunar™ interface, which incorporates a low-glare screen (in keeping with the increased emphasis on developmental care) whilst setting a new benchmark in usability.



High Frequency Oscillation Ventilation

The SLE6000 is the fourth generation oscillator from SLE. With SLE's unique valveless technology using high-speed bidirectional jets, it ensures a powerful, effective and reliable HFO delivery.

The SLE6000's square pressure waveform output delivers the most tidal volume per unit of pressure^[1], allowing the clinician to employ the lowest possible pressures whilst maintaining adequate volumes. An added benefit of this is that in term infants the performance of the SLE6000 is not significantly affected by an increase in oscillation frequency^[2].

The HFOV mode on the SLE6000 also features active exhalation that is capable of treating a wide range of patients in a way that provides optimal ventilation and controlled oxygenation. New to the SLE6000 is non-invasive HFOV.



Volume Targeted Ventilation

Volume Targeted Ventilation (VTV) is a lung protective mode of ventilation that can reduce the risk of serious complications such as BPD, pneumothorax, atelectasis and hypocarbia^[3].

In VTV mode, the SLE6000 monitors and targets the *expiratory* tidal volume (V_{te}) and can compensate for an ET tube leak of up to 50%.



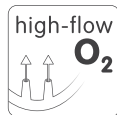


Non-Invasive Ventilation

The SLE6000 is unique in allowing for the choice of either dual or single-limb non-invasive ventilation, extending the interface options available to medical staff. These can include passive interfaces (such as the SLE Miniflow in dual-limb mode, or the Medijet in single-limb mode) and active (fluidic-flip) interfaces (such as the SLE1000 Generator or Infant Flow) in single-limb mode. NIV can be applied using a nasal mask or nasal prongs.

Servo-controlled flow compensates for varying leaks and results in a more consistent pressure requiring fewer staff interventions.

The option of dual-limb modes for nasal CPAP allow for higher pressures with shorter rise times, which is useful when using the therapy in the acute phase. All modes can be used with the same patient circuit, providing a seamless transition between modes, reducing patient discomfort and lowering the cost of treatment.



High Flow Oxygen Therapy

High Flow Therapy delivers breathing gas through a simple, loose-fitting nasal cannula that is more comfortable for the baby. It can provide on-going respiratory support throughout the infant's recovery process.

High-flow oxygen therapy is available as an optional upgrade on the SLE6000, enabling neonatal staff to provide more comprehensive care.

Alarms & Lightbar

All messages and alarms in the information bar are easy to see from a distance and are colour-coded based on priority.
A 360° lightbar further enhances visibility.

Primary Menu Buttons

With its simple menu structure the SLE6000 offers many features, but operation is still very easy to learn and use.
Four simple choices give instant access to:
Modes, Alarms, Utilities and Layout.

Additional Parameters

Secondary controls are normally hidden, and are accessible via this button.

Main Parameters

Primary ventilation parameters are permanently visible for immediate access and change between modes to show only the required parameters.



Use with Confidence...

The simplicity of the SLE6000 interface allows the user to easily access the necessary information whilst making the learning process much faster.

The SLE6000 user interface has been designed to be easily visible to the operator without excessive glare, whilst emitting as low a light as possible so as not to provide unnecessary stimulus to the patient. This is how the Lunar™ interface was born.

Recent research in Developmental Care has shown that excessive light is involved in retinal damage, sleep pattern alterations, disturbance of circadian rhythms and poor growth [4].



Pause / Screen Capture Button

Pauses the waveforms for 120 seconds. The paused screen can be stored in memory and downloaded to a USB memory stick when required.

Measured Values

Large and easy-to-read. Each parameter is clearly labelled, plus the user is easily able to switch between basic and advanced data display at any time.

Compact Design

The SLE6000 ventilator is housed in a single compact box, making it easier to clean and use. The integrated touch-screen is angled for optimal visibility and easy to read from a distance.

Graphics Section

The customisable graphics section allows the user to switch between different screen layouts that can be configured to meet individual requirements.

...and see everything

Some of this light comes from the equipment around the patient, and it is for this reason that we have chosen to implement a low-lux (Lunar™) interface on the SLE6000.

Additionally, the carefully designed workflow enables users to manage ventilation with fewer interactions with the machine, giving more time to deal with the patient's care.

The SLE6000's high-resolution, easy-to-understand screen allows you to concentrate on the patient and not the ventilator.

A New Way of Working



This ventilator has been set up to show SIMV with three waveforms. In this example, the audio alarm has been pre-silenced and a countdown timer within the button shows the remaining time. By default only the necessary parameters to control SIMV are visible.



A lung mechanics screen shows additional data - in this case two loops. A secondary column of data can be shown when required.



An alarm screen gathers all alarm settings in one place. Alarming parameters will show as cyan, yellow or red depending upon priority.

Intuitive Interface



All parameters are trended and can be shown on the trend screen. A maximum of 14 days can be recalled and then scrolled and zoomed.



Non-invasive ventilation can be as easy as invasive ventilation, with parameter controls only appearing when they are required.



Switching to HFOV is a button-push away, and does not require any changes to the patient circuit. Parameter controls have changed to reflect the new mode. The 'Additional Parameters' button can display secondary controls for this mode. Selecting any parameter activates the + and - keys to adjust the parameter value.



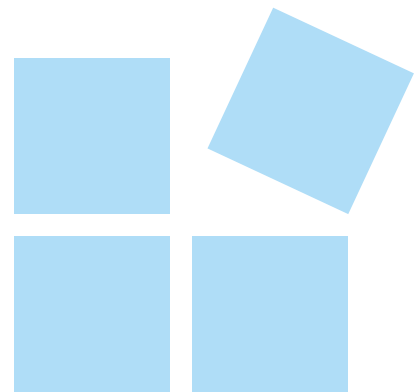
Buy with Confidence

With the world of ventilation continuously changing, the SLE6000 has been conceived as a modular system – capable of adapting to new respiratory therapies as they emerge.

The standard chassis is split into pneumatic and electronic sections, with each able to accommodate future upgrades as technology develops. For instance, the electronics section is controlled by a powerful microprocessor that can easily incorporate new features such as SpO₂ or CO₂ monitoring.

The software is also modular, with new modes added quickly and easily by your local engineer (through a USB port), so your SLE6000 will continue to meet your clinical requirements well into the future.

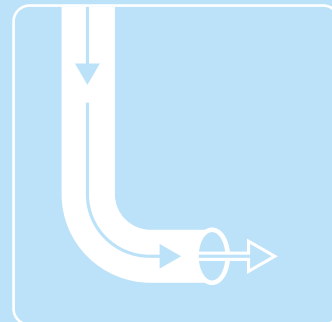
From the durable casing through to the medical grade aluminium used in the chassis (not to mention the rigorous testing), the SLE6000 has also been built to last structurally, further reducing its 'total life costs' – which our customers have long recognised as a big plus with SLE ventilators.



Valveless Technology

Many of SLE's engineering innovations have been incorporated into the SLE6000, including the unique SLE 'valveless' system.

- › The valveless system uses bidirectional jets that give fast, accurate control of the airflow.
- › The elimination of an expiratory valve means there is no diaphragm that can become sticky, causing inadvertent pressures. It also means that expiratory valves cannot be lost or misassembled prior to use.
- › No expiratory valve also means less servicing and easier cleaning.



References

1 : Harcourt ER, John J, Dargaville PA, Zannin E, Davis PG, Tingay DG.

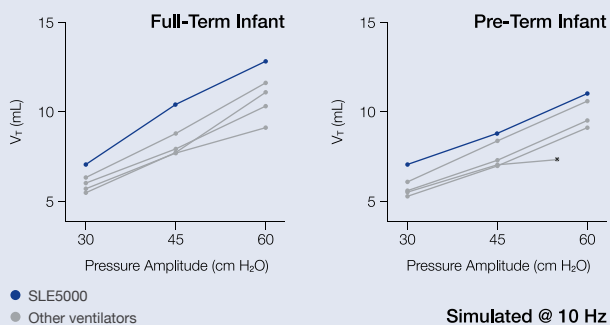
Pressure and flow waveform characteristics of eight high-frequency oscillators

Pediatr Crit Care Med. 2014 Jun;15(5):e234-40

2 : Grazioli S, Karam O, Rimensberger PC.

New generation neonatal high frequency ventilators: effect of oscillatory frequency and working principles on performance

Respir Care. 2015 Mar;60(3):363-70. doi: 10.4187/respcare.03048. Epub 2014 Nov 18



3 : Peng WS, Zhu HW, Shi H, *et al.*

Volume-targeted ventilation is more suitable than pressure-limited ventilation for preterm infants: a systematic review and meta-analysis

Arch Dis Child Fetal Neonatal Ed 2014;99: F158-F165.

4 : Thomas T. Lai, MD, Cynthia F. Bearer, MD, PhD.

Iatrogenic Environmental Hazards in the Neonatal Intensive Care Unit

Clin Perinatol 35 (2008) 163-181

Modes

› **Conventional Ventilation:**

CPAP, CMV, SIMV, PTV & PSV, VTV (Volume Targeted Ventilation)

› **HFOV:**

HFOV, HFOV+CMV

› **NIV:**

nCPAP, NIPPV, nHFOV

› **High Flow Oxygen Therapy**

Key features & specifications

- › Ventilate patients up to 30 kg
- › Unique Lunar™ interface
- › Sharp 12.1" colour LED touch-screen
- › V/P, F/P, F/V loops available, with 'store' function
- › Compact, single-box design
- › Typical 3+ hour battery life (in all modes) in normal use
- › 24V DC input
- › 14 day data trending
- › Screen capture
- › Proximal flow sensor
- › Flow and pressure breath detection
- › Nebuliser interface
- › Connectors: RS232, VGA, USB, Ethernet



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