The SLE6000H NICU Ventilator Specifications

The SLE6000 is a full specification NICU infant care ventilation system. Compact in design, it offers conventional modes with additional options for Non-Invasive Ventilation (NIV), High Frequency Oscillation Ventilation (HFOV) and High Flow Oxygen Therapy.

SpO_2 and $EtCO_2$ monitoring options are supported with the addition of plug-in modules. OxyGenie® (Auto FiO_2) is an optional integration.

Core Invasive Ventilation

▶ HFOV (Dual limb, ET)

Frequency	3 to 20 Hz
I:E Ratio	1:1 / 1:2 / 1:3
MAP	0 to 45 mbar
Delta P	4 to 180 mbar
VTV	2 to 50 ml †
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
Sigh RR	1 to 150 BPM
Sigh Ti	0.1 to 3.0 s
Sigh P	0 to 45 mbar

▶ HFOV+CMV (Dual limb, ET)

Respiratory Rate (RR)	1 to 150 BPM
Inspiratory Time (Ti)	0.1 to 3.0 s
Frequency	3 to 20 Hz
PEEP	0 to 35 mbar
PIP	0 to 65 mbar
Delta P	4 to 180 mbar
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
HFO Waveform	Oscillation on both high and low cycles or oscillation on low cycle only.
Oscillation pause	60 s

▶ CPAP (Dual limb, ET)

Inspiratory Time (Ti)	0.1 to 3.0 s
CPAP	0 to 35 mbar
PIP	0 to 65 mbar
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
RR Backup	1 to 150 BPM
Rise Time	0 to 3.0 s
Trigger Sensitivity with flow sensor: without flow sensor:	 0.2 to 20 l/min 1 to 100%

▶ PTV & PSV (Dual limb, ET)

Respiratory Rate (RR)	1 to 150 BPM
Inspiratory Time (Ti)	0.1 to 3.0 s
PEEP Pressure	0 to 35 mbar
PIP Pressure	0 to 65 mbar
Volume Targeted Ventilation (VTV)	(Added with VTV module) 2 to 300 ml †
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
Rise Time	0 to 3.0 s
Trigger Sensitivity with flow sensor: without flow sensor:	 0.2 to 20 l/min 1 to 100%
Termination Sensitivity (% of peak insp flow) (PSV only)	5 to 50%

▶ CMV (Dual limb, ET)

Respiratory Rate (RR)	1 to 150 BPM
Inspiratory Time (Ti)	0.1 to 3.0 s
PEEP	0 to 35 mbar
PIP	0 to 65 mbar
Volume Targeted Ventilation (VTV)	(Added with VTV module) 2 to 300 ml †
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
Rise Time	0 to 3.0 s

▶ SIMV (Dual limb, ET)

Respiratory Rate (RR)	1 to 150 BPM
Inspiratory Time (Ti)	0.1 to 3.0 s
PEEP	0 to 35 mbar
PIP	0 to 65 mbar
Volume Targeted Ventilation (VTV)	(Added with VTV module) 2 to 300 ml †
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
Rise Time	0 to 3.0 s
P Support	0 to 65 mbar
Trigger Sensitivity *with flow sensor:* *without flow sensor:*	 0.2 to 20 l/min 1 to 100%
Termination Sensitivity (% of peak insp flow)	5 to 50%
Termination Sensitivity parameter is not shown when pressure support (P Support) is off.	

Non-Invasive Ventilation

▶ nCPAP D (Dual limb)

for passive nCPAP interfaces e.g. SLE Miniflow

Inspiratory Time (Ti)	0.1 to 3.0 s
CPAP	0 to 35 mbar
PIP	0 to 65 mbar
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
RR Backup	1 to 10 BPM
Rise Time	0 to 3.0 s
Trigger Sensitivity	1 to 100%

▶ nCPAP S (Single limb)

for active (fluidic-flip) nCPAP interfaces (e.g. SLE1000 generator, Infant Flow or First Breath™) and other single tube interfaces

Inspiratory Time (Ti)	0.1 to 3.0 s
CPAP	2 to 15 mbar
PIP	2 to 25 mbar
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
RR Backup	1 to 10 BPM
Trigger Sensitivity	1 to 100%

▶ NIPPV D (Dual limb)

Respiratory Rate (RR)	1 to 150 BPM
Inspiratory Time (Ti)	0.1 to 3.0 s
PEEP	0 to 35 mbar
PIP	0 to 65 mbar
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
Rise Time	0 to 3.0 s

▶ NIPPV Triggered (Dual limb)

for passive nCPAP interfaces e.g. SLE Miniflow

Respiratory Rate (RR)	1 to 150 BPM
Inspiratory Time (Ti)	0.1 to 3.0 s
PEEP	0 to 35 mbar
PIP	0 to 65 mbar
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
Rise Time	0 to 3.0 s
Trigger Sensitivity	1 to 100%

▶ nHFOV D (Dual limb)

for passive nCPAP interfaces e.g. SLE Miniflow

Frequency	3 to 20 Hz
I:E Ratio	1:1 / 1:2 / 1:3
Mean Airway Pressure	0 to 45 mbar
Delta P	4 to 180 mbar
O_2 Concentration	21 to 100%
▷ **Additional Parameters**	
Sigh RR	1 to 150 BPM
Sigh Ti	0.1 to 3.0 s
Sigh P	0 to 45 mbar

O_2 Therapy

▶ High Flow Oxygen Therapy (Single limb)

Flow Rate	2 to 30 l/min
O_2 Concentration	21 to 100%

Misc. Specifications

▶ Flow Sensor

Flow sensor type: (Electrically isolated)	10 mm dual-hot-wire anemometer. (Single-use or autoclavable versions).
Applied part	Type BF
Flow rate	0.2 to 30 l/min
Accuracy	±8% maximum
Dead space	1 ml
Weight	10 g

† VTV control, when enabled, becomes Vte Target control.

SLE Ltd, Commerce Park, Commerce Way, Croydon, CR0 4YL, England
t +44 (0)330 175 0000 **e** salesadmin@inspiration-healthcare.com **w** www.inspirationhealthcaregroup.com

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Misc. Specifications

▶ Flow

Flow rate	0 to 99 l/min

▶ Volume

Expiratory tidal volume	0 to 999 ml
Expiratory minute volume	0 to 18 L

▶ Measured Parameters

Leak	0 to 99%
Respiratory rate	0 to 999 BPM
Compliance	0 to 99.9 ml/mbar
C20/C	0 to 9999
Resistance	0 to 999 mbar/(l/s)
Inspiratory time	0 to 9.99 s
Expiratory time	0 to 9.99 s
Vmin	0 to 99.99 l
Trigger resolution	1
Vte	0 to 99.9 ml
DC02	0 to 9999
I:E Ratio	1:9.9 to 9.9:1
Oxygen concentration	0 to 999%
Peak pressure	0 to 999 mbar
PEEP pressure	0 to 999 mbar
Mean pressure	-999 to 999 mbar
Delta P	9 to 999 mbar
Trending	Data logged @ 1 Hz

Above values are obtained under ATPD (ambient temperature and pressure, dry) conditions.

▶ Power AC

Mains voltage	100-240V / 50-60Hz
Power	115 VA
Fuses (x2)	T2.5AH 250V (5x20 mm)
Battery back-up	Typical 3+ hour battery life (in all modes) in normal use
Battery charging	Full charge: 18 hours 80% charge: 8 hours

▶ Power DC

Voltage	24V 4A

▶ Operating Environment

Temperature	+10°C to +40°C
Relative Humidity	10 to 90% (non-condensing)

▶ Dimensions

Size, (ventilator only)	w 330 mm x h 369 mm x d 548 mm
Height on pole	1310 mm
Weight (ventilator only)	≤ 22 kg

▶ Pneumatic Connectors

Exhalation port	15 mm F / 22 mm M conical (ISO5356-1)
Proximal airway	5 mm non-conical
Fresh gas port	15 mm M conical (ISO5356-1)

▶ Dimensions

Size, ventilator only	w 330 mm x h 369 mm x d 548 mm
Height on pole	1310 mm
Weight (ventilator only)	≤ 22 kg

▶ Pneumatic Connectors

Exhalation port	15 mm F / 22 mm M conical (ISO5356-1)
Proximal airway	5 mm non-conical
Fresh gas port	15 mm M conical (ISO5356-1)
Nebulizer port (on rear)	5 mm non-conical

▶ Classification (Electrical)

Type of protection against electric shock:	Class 1 Unit must be earthed.
Degree of protection against electric shock:	Type BF, applied part

▶ Connectors (Rear mounted)

RS232 & USB data ports
Display port
USB Power port for nebuliser
Nurse Call
24V DC input
SpO_2 & $etCO_2$
RJ45 Ethernet networking port

▶ IP Rating

Type of protection against ingress of water	IP21

▶ Environmental Storage Conditions

Ambient Temperature	-20°C to +50°C
Relative Humidity	10% to 90% non-condensing

▶ Sound levels

Sound pressure level	49 dBA

Optional Module Features

▶ SpO_2

Displayed parameters	Saturation (fraction of oxyhaemoglobin to functional haemoglobin), pulse rate, Signal IQ and plethysmogram
Trends	SpO_2 and Pulse rate for previous 14 days
Measuring method	Absorption spectrophotometry
Ventilator connector	ODU-type plug (red). Powered from ventilator.
Dimensions (mm)	24 (h) x 33 (w) x 92 (l)
Weight (excluding sensor)	0.122 kg

	Fractional SpO_2 (%)	Pulse Rate (BPM)
Display Range	0% - 100%	25 - 240 BPM
Calibration range	70% - 100%	25 - 240 BPM
No motion accuracy (rms)	± 2.0%	± 3.0 BPM
Motion accuracy (rms)	± 3.0%	± 5.0 BPM
Resolution	≤ 0.1%	≤ 1 BPM
Averaging time (seconds)	2-4, 4-6, 8, 10, 12, 14, 16	-

▶ $EtCO_2$

CO_2 units	User selectable (mmHg or kPa or Vol%)
$EtCO_2$ range	0-99.9 mmHg
$EtCO_2$ resolution	1 mmHg
CO_2 accuracy	0-38 mmHg: ± 2 mmHg 39-150 mmHg: ± (5% of reading + 0.08 x [reading - 39 mmHg])
CO_2 sampling flow rate	50 ml/min (+15 ml/min, -7.5 ml/min) flow measured by volume
Waveform sampling	20 samples/s
Initialisation time	40 s (typical, includes power-up and initialisation time)
Ventilator connector	ODU-type plug (yellow). Powered from ventilator.
Dimensions (mm)	70 (w) x 93.3 (l) x 50.3 (h)
Weight	240 g

▶ OxyGenie®

Controls	Adds additional (start/stop) option to FiO_2 parameter controller. Range selector in SpO_2 utilities menu. Ranges are: 90 - 94%, 91 - 95% (default), 92 - 96%, 94 - 98% Manual override (timed, for 30 seconds)
Waveforms	Additional SpO_2 screen can show any one ventilation parameter plus plethysmogram and trends of SpO_2 and FiO_2.
Alarms	Alarms automatically set on SpO_2 software, corresponding with target range (1% above high and 1% below low). Can be manually set as well. Alarm indications shown in Alarm bar. Alarm level indicators on SpO_2 and FiO_2 graphs.
Indicator	Status panel shows OxyGenie status such as 'Auto', 'Manual Override' (with countdown) or 'Waiting for Signal'.
Trends	Trending information for SpO_2 and FiO_2 can be shown simultaneously. Up to 14 days of data are stored for each parameter.

For further specifications & operating temperature, pressure and humidity ranges for SpO_2 and $EtCO_2$ please see User Manuals.

The Microstream technology is designed for use during invasive ventilation in conventional modes. It is currently not recommended for use in NIV or during HFOV. An IntelliBridge module is also available.

SLE Ltd, Commerce Park, Commerce Way, Croydon, CR0 4YL, England
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