

Aliseo®

Anesthesia system

Cost effective technology
in anesthesia



Aliseo Anesthesia System

Features

Ventilator

- Electrically driven
- Volume controlled, ACV, electronic PEEP
- Ventilation with ambient air
- Stand-by mode at end case
- Direct manual ventilation capability

Integrated monitoring

- Ventilatory monitoring (**Aliseo Basic**)
- Ventilatory & Haemodynamic monitoring (**Aliseo Haemo**)
 - ECG, NIBP, Temp, SpO₂
- Ventilatory & Respiratory gas analysis (**Aliseo Full-Gas**)
 - CO₂, O₂, N₂O, AA with automatic identification, MAC & Balance

Gas mixer

- 3 gases with 5 flowmeter tubes mixer
- Holder for 2 vaporizers
- Independent mixed fresh gas outlet

System management

- 10.4" LCD color display
- Flat panel keyboard
- Easy and intuitive controls

Innovative patient circuit

- Integrated flow sensors
- Selectable Open or Circle circuit ventilation
- Fully autoclavable and "latex-free"
- Simple disassembly without tools
- Active/passive or Venturi scavenging system integrated in the patient circuit block

Physical specifications

Complete system dimensions

	Trolley base	Pendant base
Height:	160 cm	96 cm
Width:	70 cm	70 cm
Depth:	78 cm	68 cm
Typical weight:	95 Kg	90 Kg

Anesthetic gas mixer

Height:	34 cm
Width:	49 cm
Depth:	30 cm
Typical weight:	20 Kg (without vaporizers)

Lung ventilator

Height:	26 cm
Width:	56 cm
Depth:	52 cm
Typical weight:	30 Kg
Table top	37 x 31 cm

Drawer

Height:	25 cm
Width:	49 cm
Depth:	30 cm

Side rails

Standard DIN:	10 x 25 mm
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Wheels

Diameter:	125 mm
Brakes:	Single lever on frontal wheels

Cylinder holders

Optional cylinders:	Up to 2: O ₂ and N ₂ O
Positioning:	holder for two cylinders with fixing belts

Upper shelf (optional)

	CC II - S/5 CM - CC5 - Light
Width:	32,7 cm
Depth:	26 cm
Weight limit:	20 kg

Upper shelf and holder for S/5 AM (optional)

	Shelf	Holder
Height:	-	16,4 cm
Width:	33,5 cm	32 cm
Depth:	31,2 cm	25 cm
Weight limit:	25 kg	20 kg

* Shelves include fixing system to the monitors

Ceiling mount

Height:	96 cm
Width:	70 cm
Depth:	68 cm
Typical weight:	37 Kg

* Compatible with Soxil and Ondal ceiling columns

Video display

Type:	10.4" LCD color
Resolution:	VGA (640 x 480 pixel)
Displaying:	Up to three waveforms*, 10 hours graphical and numerical trends*

* Depending on configuration

Gas Mixer specifications

Fresh gas outlet

Standard connector:	22 mm OD, 15 mm ID, ISO
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Gas supply

Medical gases:	O ₂ , N ₂ O and Air
Pipeline input range:	min 350 kPa - max 500 kPa (± 20%)
Gauges:	O ₂ , N ₂ O and Air (0-600kPa, ± 4% f.s.)
Pipeline connections:	NIST type. Connection for O ₂ , N ₂ O and Air with filter and inlet check valve
Aux. outlet (optional):	O ₂ and Air
Inlet safety valve:	Opening pressure 600-650 kPa
O ₂ flush:	40 l/min
O ₂ supply failure alarm:	Auditory alarm. Minimum alarm time: 8 seconds.

Flowmeters

Range O ₂ :	Two flowmeter tubes - from 0.1 to 1 l/min and from 1 to 10 l/min
Range N ₂ O:	Two flowmeter tubes - from 0.1 to 1 l/min and from 1 to 10 l/min
Range Air:	One flowmeter tube - from 0.2 to 15 l/min
Accuracy:	±10% (O ₂ and N ₂ O) ±10% (Air from 0.6 to 15 l/min) ±15% (Air from 0.2 to 0.4 l/min)
Gas mixture selection:	O ₂ and Air or O ₂ and N ₂ O
Fresh gas relief valve:	Opening pressure 90 hPa

Hypoxic guard system

Method:	N ₂ O flow control by mechanical link with O ₂ flow regulation and by O ₂ pressure
Minimal O ₂ concentration and N ₂ O cut-off	25% O ₂ in O ₂ /N ₂ O mixture. Complete N ₂ O shut-off during O ₂ missing

Anesthetic agents delivery

Holder:	Holder for 2 vaporizers with Selectatec coupling
Vaporizers:	Datex-Ohmeda TEC 4, TEC5 and TEC 6 or vaporizers having compatible Interlock system

Ventilator specifications**Ventilation modes**

Electrically powered automatic ventilator
Volume controlled ventilation AUTO (CMV)
Assisted ventilation ACV
Man/Spont

Ventilatory performances

Tidal volume:	from 50 to 1600 ml (Volume controlled mode)
Steps:	50 - 300 (10 ml steps) 300 - 1000 (25 ml steps) 1000 - 1600 (50 ml steps)
Minute volume:	Max 20 l/min
I:E ratio:	1:4, 1:3, 1:2, 1:1, 2:1, 3:1, 4:1
Peak gas flow:	75 l/min
Respiratory rate:	from 6 to 60 breaths/min
Plateau:	OFF, 10% of the breathing cycle
Sigh:	OFF, 1/50, 1/100, 1/150 breaths, 1.5 x TV
Inspiratory flow shapes:	Constant, decreasing, increasing, sinusoidal
ACV trigger level:	from -2 to -14 hPa below PEEP
ACV inspiratory time:	from 1 to 3 seconds
PEEP (electronic):	OFF (0 hPa), from 3 to 12 hPa
Working pressure:	from 3 to 70 hPa

Delivering accuracy

Tidal volume delivered:	±10%
Respiratory rate:	±3%
I:E ratio:	±5%
PEEP:	±2 hPa

Ventilatory monitoring

Flow-volume detection:	2 hot wire flow sensors (one on the expiratory line, the other one on the fresh gas inlet line)
Expiratory volume measurements:	Bar graph indication for Tidal volume Digital indication for minute volume
Range:	Tidal volume from 0 to 3000 ml Minute volume from 0 to 30 l/min
Accuracy:	±8%
Airways pressure:	Front panel gauge indication. 2 pressure transducers (one on the inspiratory line and one on the expiratory line).
Pressure measurements:	Numerical indication of Peak and Mean pressure; Airways pressure waveform display
Range:	Gauge from -10 to +100 hPa Pressure transducers from -5 to 70 hPa
Accuracy:	Gauge ±2.5%. Pressure transducers ±1.5%
Respiratory rate detection:	Electronically detected by flow and airways pressure signals. Numerical indication.
Range:	from 3 to 90 breaths per minute
Accuracy:	±3%
O ₂ Concentration:	Galvanic cell O ₂ sensor
Sampling rate:	180 ml/min
Fi O ₂ value:	Bar graph and numerical value
Range:	from 10 to 110%
Accuracy:	±2%
Sensor lifetime:	Minimum 6 months, maximum 12 months

- Aliseo Basic and Haemo

Ventilatory alarms

Maximum airways pressure limit:	from 15 to 70 hPa
Minimum airways pressure limit:	from 3 to 15 hPa (automatically added to the PEEP)
Apnea:	Lasting more than 16 seconds without crossing the Paw min alarm level.
Tidal volume limits:	Automatically set at -20% and +20% of the set value in AUTO and ACV mode. Not active in MAN-SPONT mode
Minute volume limits:	Automatically set at -20% and +20% of the set value in AUTO. The minimum limit is automatically set at -20% in ACV mode. The maximum limit can be set from +50% to +100% by steps of 10% Not active in MAN-SPONT mode

Respiratory rate limits: Automatically set at -10% and +10% of the set value in AUTO mode. The minimum limit is automatically set at -10% in ACV mode. The maximum limit can be set from +30% to +100% by steps of 10%

FiO₂ limits*: between 21 and 90% the lower limit; between 50 and 100% the higher limit

* Aliseo Basic and Haemo

Haemodynamic specifications (Aliseo Haemo only)

ECG

Leads:	I, II, III
Filter:	0.5 – 30 Hz
Range:	from 30 to 250 bpm
Accuracy:	± 5% or 5 bpm
Resolution:	1 bpm
Protection from the interference of the electrosurgical apparatus:	Yes
Heart beat indication:	Adjustable sound beat every QRS detection
Cable:	Three leads patient cable
Waveform:	ECG or SpO ₂ selectable real time waveform
Waveform speed:	12.5 or 25 mm/s
Safety class:	IEC Class I, type CF

SpO₂

Range:	from 40 to 100%
Accuracy:	80...100% ±2 digits; 50...80% ±3 digits 40...50% unspecified
Resolution:	1 bpm
Display averaging time:	Beat-to-Beat; Normal (10 s); Slow (20 s)
Waveform:	ECG or SpO ₂ selectable real time waveform
Pulse curve scaling:	2, 5, 10, 20, 50, AUTO
Safety class:	IEC Class I, type BF

NIBP

Range:	adult from 25 to 280 mmHg pediatric from 25 to 200 mmHg
Modes:	AUTO – MANUAL
Numeric display:	Systolic, diastolic, mean
Measurement intervals:	3, 5, 15, 30, 60 min
Max. inflation pressure:	150, 200, 280 mmHg
Venous clamp:	ON – OFF
Safety class:	IEC Class I, type BF

Temperature

Range:	from 10 °C to 45 °C
Resolution:	0.1 °C
Accuracy:	±0.1 °C (25-45 °C); ±0.2 °C (10-25 °C)
Safety class:	IEC Class I, type CF

Alarms

Alarm indication:	Asystolia, Leads off, SpO ₂ probe disconnection from monitor and patient, Cuff loose, Cuff occluded,
HR max:	from 35 to 250 bpm
HR min:	from 30 to 245 bpm
SpO ₂ min:	from 50 to 100%
NIBP sys max:	OFF to 265 mmHg
NIBP sys min:	OFF to 260 mmHg
NIBP dia max:	OFF to 265 mmHg
NIBP dia min:	OFF to 260 mmHg
TEMP min:	from 10 to 40 °C

Gas module specifications (Aliseo Full-Gas only)

Respiratory monitoring

Gas module:	Compact module, M-CAiO
Gas detected:	CO ₂ , O ₂ , N ₂ O, Anesthetic Agents with automatic identification
Measurement methods:	Side-stream analyzer
Sensor:	Paramagnetic chamber for O ₂ ; infrared analyzer for CO ₂ , N ₂ O and Anesthetic Agents
Sampling rate:	200 ml/min ±20%
Data display:	Numerical Fi and Et values of all gases MAC and Balance, real time waveforms display for CO ₂ , O ₂ and AA.
CO ₂ measuring range:	from 0 to 15 vol% (0...15 kPa, 0...113 mmHg)
Accuracy:	±1 vol%
O ₂ measuring range:	from 0 to 100%
Accuracy:	±0.2 vol%
N ₂ O measuring range:	from 0 to 100%
Accuracy:	±2 vol%
AA measuring range:	from 0 to 6 vol% (Halothane, Enflurane and Isoflurane); from 0 to 8 vol% (Sevoflurane); from 0 to 20 vol% (Desflurane)
Accuracy:	±0.2 vol%
Identification threshold:	0.15 vol%
MAC range:	from 0 to 9.9 MAC
Respiratory rate:	from 4 to 60 breaths/min (1% CO ₂ deviation in Standby mode)

Gas monitoring alarms

Alarm indication:	Apnea (after 20 sec in standby mode), Replace D-Fend, Fi N ₂ O max, sampling line occlusion, sampling gas exhaust outlet occlusion
CO ₂ alarm limits:	from 0 to 114 mmHg ETCO ₂ ; OFF from 0 to 22 mmHg FICO ₂ OFF
O ₂ alarm limits	from 18 to 100 % FiO ₂ ; OFF from 10 to 100 % ETO ₂ OFF
AA alarm limits	from 0 to 30 % ETAA; OFF from 0 to 30 % FiAA; OFF
Resp. rate alarm limits	from 4 to 60 breaths/min (Standby mode)

General specifications gas module

Height:	122 mm
Width:	75 mm
Depth:	228 mm
Weight:	1.6 Kg
Operating temp:	from +10 to +40 °C
Atmospheric pressure:	from 660 to 1060 mbar (500 - 800 mmHg)
Humidity:	from 10 to 95% (non condensing)
Safety class:	IEC Class 1, type BF

Electrical specifications**Power supply**

Power input:	230 Vac, (± 10%), 50/60 Hz
Power consumption:	80 W
Grounding:	Hospital grade
Fuses:	T 1.6 H 250V
Safety class:	IEC Class 1, type B

Communication port

Serial interface:	2 connectors male 9 pin
Function:	Connection to external printer and UPS

Environmental specifications**System operation**

Operating temp:	from +10° to +40 °C
Humidity:	from 10 to 85% (non condensing)
Atmospheric pressure:	from 660 to 1060 mbar
Storage temperature:	from -10° to +60 °C

Safety standards

Electrical:	EN 60601.1
Electromagnetic compatibility (EMC):	EN 60601.1.2
Anesthesia workstation:	EN 740

Classification

The Datex-Ohmeda Aliseo is classified as a Class IIb device, in accordance with EU Medical Device Directive 93/42

Operational modes

Breathing circuit:	Selectable open and circle circuit with integrated AGS System. Direct ventilation by to and from system with APL valve.
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Carbon dioxide absorbent canisters

Single use canister:	D-0 Compact Absorber Single Use
Height:	108 mm
Length:	147 mm
Width:	90 mm
Weight:	net 550 g / tare 90 g
Volume	Canister 850 ml; Max. soda lime 600 ml
Soda lime:	Sofnolime; granule size 2.5–5 mm; moisture content 12–19%; color indicator: white to violet
Reusable Canister:	D-0 Compact Canister Reusable
Height:	108 mm
Length:	147 mm
Width:	90 mm
Weight:	net 550 g / tare 90 g
Volume:	Canister 900 ml; Max. soda lime 700 ml

Ports and connectors

Expiratory line inlet:	22 mm OD, 15 mm, ID ISO
Inspiratory line outlet:	22 mm OD, 15 mm, ID ISO
Expiratory line exhaust:	30 mm OD, 22 mm, ID ISO
Fresh gas excess exhaust:	30 mm OD, ISO
Fresh gas inlet:	22 mm OD, 15 mm, ID ISO

Materials

All materials in contact with exhaled patient gases are autoclavable, except gas sample line and disposable airway adapter.
All materials in contact with patient gas are latex free

Breathing circuit parameters

Compliance:	1.2 ml/cmH ₂ O (with patient tubes 1.5 m length)
Inspiratory limb resistance:	5.5 hPa @ 60 l/min
Expiratory limb resistance:	5.8 hPa (open); 8.3 hPa (circle) @ 60 l/min
Fresh gas excess valve resistance:	0.75 hPa @ 5 l/min, 1.5 hPa @ 10 l/min, 6 hPa @ 30 l/min

Anesthetic gas scavenging

Overpressure valve:	≤2 hPa @ 30 l/min, 4.7 hPa @ 75 l/min
Sub-ambient valve:	≤0.3 hPa @ 15 l/min
Scavenging indicator:	4 liters reservoir bag
Passive system:	Up to 6 meters long and minimum 22 mm ID disposal tube.
Active scavenging with pipeline aspiration:	Adjustable extracted flow: max 30 l/min
Active scavenging ejector (Venturi):	Adjustable extracted flow with ejector: 30 l/min max. Driving gas air or oxygen
Connectors:	Passive/Venturi: 30 mm OD, male, ISO and standard hose nipple for compressed gas. Central pipeline aspiration: nipple for 12 mm diam. hose



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