

GE Healthcare

# Carestation 30

## Features

- GE Datex-Ohmeda family look and quality
- One or Two gases: O<sub>2</sub>+ N<sub>2</sub>O or Air (optional)
- 5.7-inch color ventilator display with waveforms and alarm message indicators
- Lightweight and compact for easy maneuverability
- One or two vap positions
- Dove tails for mounting accessories (optional)

## Enhanced monitor integration capabilities

- Inspired oxygen monitoring (optional)
- SPO<sub>2</sub> monitoring with waveform (optional)

## Advanced Ventilation

- Ventilation Modes:
  - VCV (Volume Control)
- WYSIWYG (What You Set Is What You Get) Tidal Volume setting
  - Compensation for breathing circuit compliance
  - Compensation for Fresh Gas Flow (optional)
- Pressure waveform for visual reference on a breath-by-breath basis
- Standby-mode



## Revolutionary New Breathing Circuit

- Easy to clean, fully autoclavable, latex-free
- Easy removal-no tools required
- Quick Release for fast remove canister and refill soda lime
- Integrated design-less parts and connections helps reduce potential for leaks and misconnects
- One step bag/vent switch turns ventilator on/off
- Passive AGSS (optional)
- Auxiliary Comment Gas Outlet (optional)



## Physical Specifications

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### Dimensions

Height: 148 cm/58 in

Width: 90 cm/35 in

Depth: 70 cm/28 in

Weight: 70 kg/220 lbs

### Top shelf

Weight limit: 15 kg/33 lbs

Width: 40 cm/16 in

Depth: 30 cm/12 in

### Work surface

Height: 74 cm/29 in

Size: 630 cm<sup>2</sup>/98 in<sup>2</sup>

### Casters

12.5 cm/5 in, with brakes on the front casters

### Drawers

20 cm x 30 cm x 30 cm/8 in x 12 in x 12 in

### Ventilator display

5.7 inch TFT, 640 x 480

## Ventilator Operating Specifications

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### Ventilation operating modes

VCV

### Ventilator (VT) parameter ranges

Tidal volume range:  
50 to 1500 mL

Incremental settings:  
10 mL

Rate:  
4 to 100 breaths per minute  
(increments of 1 breath per minute)

Inspiratory/expiratory ratio:  
2:1 to 1:8 (increments of 0.5)

### Ventilator performance

Pressure range at inlet:  
280 kPa to 600 kPa/ 41 psi to 87 psi

Peak gas flow:  
63 L/min + fresh gas flow

### Ventilator monitoring

Expiratory minute volume range: 0 to 63 L/min

Expiratory tidal volume range: 50 mL to 1500 mL

O<sub>2</sub> %: 15% to 100%

Peak pressure: -20 to 100 cmH<sub>2</sub>O

Mean pressure: -20 to 100 cmH<sub>2</sub>O

## Ventilator accuracy

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### Delivery/monitoring accuracy

Volume delivery:  
≥ 100 mL = better than 20%  
< 100 mL = better than 20 mL

Volume monitoring:  
≥ 100 mL = better than 20%  
< 100 mL = better than 30 mL

### Alarm settings

Tidal volume (TV<sub>exp</sub>):  
Low: 0 to 800 mL  
High: 100 to 1800 mL

Inspired oxygen (FiO<sub>2</sub>):  
Low: 18 to 99%  
High: 19 to 100%

Apnea alarm:  
In Bag Mode, Apnea alarm happens under condition of no flow value, PAW fluctuates less than 2cmH<sub>2</sub>O, and continue time exceeds 30 seconds.

Airway pressure (PAW):  
Low: 4 to 20 cm H<sub>2</sub>O  
High: 5 to 100 cm H<sub>2</sub>O

Sustained airway pressure:  
Paw ≥ 10cmH<sub>2</sub>O continuously for 10 seconds

## Ventilator components

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### Flow transducer

Type: TVX Flow Transducer Cartridge  
Dimensions: 22 mm OD and 15 mm ID/22 mm ID  
Location: Expiratory Port

### Oxygen Sensor

Type: Oxygen Sensor OOM102  
Life Cycle: 15 Months

## Anesthetic agent delivery

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Vaporizers:  
Tec 7 or V5

Number of positions:  
2 or 1

Mounting:  
Tool-free installation  
Selectatec manifold interlocks or  
Cagemount

## Electrical specifications

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### Current leakage

100/120 V: < 500μA

220/240 V: < 500μA

### Power and battery backup

Supply voltage:  
100-120 Vac, 50/60 Hz

Power input:	220-240 Vac, 50/60 Hz
Backup power:	≤ 50 VA
Battery type:	Demonstrated battery backup time under typical operating conditions is 360 minutes when fully charged
Power cord:	Internal rechargeable sealed lead acid Length: 5 m/16.4 ft

Provides a nominal minimum 22% concentration of oxygen in O<sub>2</sub>/N<sub>2</sub>O mixture

## Pneumatic specifications

### Auxiliary common gas outlet

Connector: ISO 22 mm OD and 15 mm ID

### Gas supply

Pipeline input range: 280 kPa to 600 kPa/41 psi to 87 psi

Pipeline connections: DISS - Male; DISS-Female; S90-116 (French Air Liquide); BSPP 3/8 (Scandinavian) or NIST (ISO 5359). All fittings available for O<sub>2</sub>, Air, and N<sub>2</sub>O

Cylinder input: Pin indexed in accordance with CGA-V-1; contains input filter and check valve  
Note: Maximum 2 cylinders; all 2 inboard mounted.

Primary regulator diaphragm minimum burst pressure: 2758 kPa/400 psig

Primary regulator nominal output: Pin indexed: The primary regulator is set to pressure less than 345 kPa (50 psi).

### O<sub>2</sub> controls

Method: Proportionate decrease of N<sub>2</sub>O with reduction in O<sub>2</sub> Pressure

Supply failure alarm range: ≤0.22Mpa continuously for 3 seconds

O<sub>2</sub> flush: Range: 25 to 75 L/min

### Flowmeters

O<sub>2</sub> ranges: 0.1 to 1.0 L/min and 1.0 to 10.0 L/min

N<sub>2</sub>O ranges: 0.1 to 1.0 L/min and 1.0 to 10.0 L/min

Air range: 0.1 to 1.0 L/min and 1.0 to 10.0 L/min

### Hypoxic guard system

Type: Mechanical gear

Range:

## Environmental specifications

### System operation

Temperature: 10° to 40°C/50°F to 104°F

Humidity: 15 to 95% relative humidity

Altitude: -440m to 3565m

### System storage

Temperature: -25°C to 65°C/-13°F to 149°F

Humidity: 15 to 95% relative humidity

Altitude: -440m to 5860m

### Electromagnetic compatibility

Immunity: Complies with all requirements of EN/IEC

Emissions: CISPR 11 group I class B

Approvals: EN/IEC 60601-1-2

## Breathing circuit specifications

### Operational modes

Breathing circuit is circle mode only

### Carbon dioxide absorbent canister

Absorbent capacity: 1450 mL

### Ports and connectors

Exhalation: 22 mm OD ISO 15 mm ID taper

Inhalation: 22 mm OD ISO 15 mm ID taper

Bag port: 22 mm OD

### Pressure gauge

Scale range:

### Bag-to-Ventilator switch

Type: Bi-stable

Control: Controls ventilator and direction of breathing gas within the circuit

### Integrated Adjustable Pressure Limiting (APL) valve

Range: 0 to 70 cm H<sub>2</sub>O

Tactile knob indication at: 30 cm H<sub>2</sub>O and above

Adjustment range of rotation: 0 to 30 cm H<sub>2</sub>O (0 to 230°)

30 to 70 cm H<sub>2</sub>O (230 to 330°)

### Materials

All materials in contact with exhaled patient gases are autoclavable, except flow sensor and O<sub>2</sub> cell.

All materials in contact with patient gas are free of natural rubber latex.

### Breathing circuit parameters

Compliance:

Bag Mode		Vent Mode	
Internal Compliance	Internal Compliance	Internal Compliance	Internal Compliance
(ml/cmH2O)	(ml/30cmH2O)	(ml/cmH2O)	(ml/30cmH2O)
1.45	44	1.3	39

Breathing system resistance in bag mode\*:

Bag mode*	Flow (L/min)	Resistance (kPa)	Resistance (cmH2O)
	5	0.03	0.3
30	0.17	1.7	
60	0.56	5.6	

\*Values include patient circuit tubing and Y-piece 0.15 kPa (0.20 psi) expiratory resistance at 1 L/s. Patient circuit tubing and breathing system configurations may affect resistance.

### Anesthetic gas scavenging

#### Passive scavenging

Negative pressure relief:

0.3 cmH<sub>2</sub>O

Outlet connector:

30 mm male taper ISO

## Integrated Pulse Oximetry specifications

### SpO<sub>2</sub>

Declared range:

70 to 100%

Displayed range:

0 to 100%

First reading, full accuracy:

≤ 10 seconds

Accuracy:

70 to 100% ± 2 digits  
(without clinical motion)  
70 to 100% ± 3 digits  
(during clinical motion)  
70 to 100% ± 2 digits  
(during low perfusion)  
Below 70% unspecified

≤ 15 seconds

Accuracy:

30 to 250 bpm: ± 2 digits or ± 2%, whichever is greater, (without clinical motion)

30 to 250 bpm: ± 5 digits (during clinical motion)

30 to 250 bpm: ± 3 digits (during clinical low perfusion)

251 to 300 bpm unspecified

### Alarm for SpO<sub>2</sub> module on CS30 machine

1. "SpO<sub>2</sub> no valid data" alarm: the board does not provide SpO<sub>2</sub> or pulse rate values.
2. "SpO<sub>2</sub> board removed" alarm: the communication between the board and the host stops
3. "SpO<sub>2</sub> probe off" alarm : Sensor is off patient (see SENSOR\_OFF)
4. "Check SpO<sub>2</sub> Probe" alarm: Sensor placement is poor or plethysmographic waveform amplitude is too low to calculate SpO<sub>2</sub> or pulse rate values (see SENSOR\_SITE)
5. "No SpO<sub>2</sub> Probe" alarm: No sensor plugged in (see NO\_SENSOR)
6. "SpO<sub>2</sub> Faulty Probe" alarm: Probe hardware error (see PROBE\_FAULT)

### Pulse rate

Displayed range:

30 to 300 beats per minute (bpm)

First reading, full accuracy:

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