

Carestation™ 620

The Carestation 620 is a compact, versatile and easy to use anesthesia system designed to help clinicians deliver reliable anesthesia care to solve today's toughest challenges.

Key Features

- Elegant modern design in a slim, compact frame well suited for constrained environments
- Simple and easy to use 15" touchscreen ventilator display
- Intuitive CARESCAPE™ inspired user interface for the unified Carestation user experience
- Integrated Respiratory Module

Ventilation

- Small, compact breathing system specifically designed for low flow anesthesia
- Fast gas kinetics for rapid wash-in and wash-out
- Digitally controlled flow valve ventilator supports all patient types from neonates to adults
- Continual fresh gas flow with fresh gas flow compensation during mechanical ventilation

Design

- Durable wheels for mobility and stability
- Robust and easy to clean surfaces
- Top shelf display mounting
- Two vaporizer configuration
- Bi-level work surface illumination
- Absorbent canister designed for ease of use and long life
- Intelligent lighting that highlights active flow controls and auxiliary ports when in use



Physical Specifications

Product Description

Carestation 620 A1

Dimensions

Height: 135 cm/53.1 in
Width: 82.5 cm/32.4 in
Depth: 69.1 cm/ 27.2 in
Weight: 145 kg/320 lb*

Top shelf

Weight limit: 25 kg/55 lb
Width: 41.3 cm/16.3 in
Depth: 27.0 cm/10.6 in

Work surface

Height: 83.6 cm/32.9 in
Size: 1930 cm²/299 in²
Size: 2950 cm²/471 in²
(with optional flip shelf)

Upper left Datex-Ohmeda (DO) dovetail

Dovetail length: 54 cm/21.3 in

Lower left Datex-Ohmeda (DO) dovetail

Dovetail length: 28 cm/11.0 in

Right Datex-Ohmeda (DO) dovetail

Dovetail length: 96.4 cm/38.0 in

Drawers (optional) (internal dimensions)

Height:
Top and middle: 8.6 cm/3.4 in
Bottom: 13.3 cm/5.2 in
Width: 34 cm/13 in
Depth: 37 cm/14.6 in

Manual ventilation bag arm (optional)

Arm length: 39.8 cm/15.7 in
Bag arm height
(adjustable): 53 cm/20.9 in
136 cm/53.5 in

Casters

Diameter: 12.5 cm/4.9 in
Brakes: Caster Brakes



Ventilator Operating Specifications

Modes of ventilation – included

VCV (Volume Control) Mode with tidal volume compensation

Modes of ventilation – optional

PCV (Pressure Control Ventilation)
PCV-VG (Pressure Controlled Ventilation-Volume Guarantee)
SIMV (Synchronized Intermittent Mandatory Ventilation)
(volume and pressure)
PSVPro™ (Pressure Support with Apnea backup)

Advanced software options

Spirometry
VCV Cardiac Bypass

*Excludes vaporizers, airway gas module, patient monitor and wall mount bracket.

Ventilator parameter ranges

| | |
|---|---|
| Tidal volume range: | 5 to 1500ml (PCV modes 5 to 1500ml) (Volume Control, PCV-VG and SIMV volume 20 to 1500ml) |
| Incremental settings: | 20 to 50 mL (increments of 1 mL) 50 to 100 mL (increments of 5 mL) 100 to 300 mL (increments of 10 mL) 300 to 1000 mL (increments of 25 mL) 1000 to 1500 mL (increments of 50 mL) |
| Minute volume range: | Less than 0.1 to 99.9 L/min |
| Pressure (P_{inspired}) range: | 5 to 60 cmH ₂ O (increments of 1 cmH ₂ O) above set PEEP |
| Pressure (P_{max}) range: | 12 to 100 cmH ₂ O (increments of 1 cmH ₂ O) |
| Pressure (P_{support}) range: | Off, 2 to 40 cmH ₂ O (increments of 1 cmH ₂ O) |
| Respiratory Rate: | 4 to 100 breaths per minute for Volume Control and Pressure Control; 2 to 60 breaths per minute for SIMV, and PSVPro (increments of 1 breath per minute) |
| Inspiratory/ expiratory ratio: | 2:1 to 1:8 (increments of 0.5) (VCV, PCV, PCV-VG) |
| Inspiratory time: | 0.2 to 5.0 seconds (increments of 0.1 seconds) (SIMV, and PSVPro) |
| Trigger window: | Off, 5 to 80% of Texp (SIMV, PSVPro) (increments of 5%) |
| Flow trigger: | 1 to 10 L/min (increments of 0.5 L/min) 0.2 to 1 L/min (increments of 0.2 L/min) |
| Inspiration termination level: | 5 to 75% (increments of 5%) |
| Inspiratory Pause range: | Off, 5-60% of Tinsp |

Positive End Expiratory Pressure (PEEP)

| | |
|--------|---|
| Type: | Integrated, electronically controlled |
| Range: | OFF, 4 to 30 cmH ₂ O (increments of 1 cmH ₂ O) |

Ventilator performance

| | |
|-----------------------------|----------------------------|
| Peak gas flow: | 120 L/min + fresh gas flow |
| Flow valve range: | 1 to 120 L/min |
| Flow compensation range: | 100 mL/min to 15 L/min |

Ventilator Accuracy

Delivery/monitoring accuracy

| | |
|----------------------|--|
| Volume delivery: | > 210 mL = better than 7% ≤ 210 mL = better than 15 mL < 60 mL = better than 10 mL |
| Pressure delivery: | ±10% or ±3 cmH ₂ O (larger of) |
| PEEP delivery: | ±1.5 cmH ₂ O |
| Volume monitoring: | > 210 mL = better than 9% ≤ 210 mL = better than 18 mL < 60 mL = better than 10 mL |
| Pressure monitoring: | ±5% or ±2.4 cmH ₂ O (larger of) |

Alarm settings

| | |
|---------------------------------|--|
| Tidal volume (V_{TE}): | Low: OFF, 1 to 1500 mL High: 20 to 1600 mL, OFF |
| Minute volume (V_E): | Low: OFF, 0.1 to 10 L/min High: 0.5 to 30 L/min, OFF |
| Inspired oxygen (FiO_2): | Low: 18 to 99% High: 19 to 100%, OFF |
| Apnea alarm: | Mechanical ventilation ON: < 5 mL breath measured in 30 seconds Mechanical ventilation OFF: < 5 mL breath measured in 30 seconds |
| Low airway pressure: | 4 cmH ₂ O above PEEP |
| High pressure: | 12 to 100 cmH ₂ O (increments of 1 cmH ₂ O) |
| Sustained airway pressure: | Mechanical ventilation ON: $P_{\text{max}} < 30$ cmH ₂ O, the sustained limit is 6 cmH ₂ O $P_{\text{max}} 30$ to 60 cmH ₂ O, the sustained limit is 20% of P_{max} $P_{\text{max}} > 60$ cmH ₂ O, the sustained limit is 12 cmH ₂ O PEEP and mechanical ventilation ON: Sustained limit increases by PEEP minus 2 cmH ₂ O Mechanical ventilation OFF: $P_{\text{max}} 12$ to 60 cmH ₂ O, the sustained limit is 50% of P_{max} $P_{\text{max}} > 60$ cmH ₂ O, the sustained limit is 30 cmH ₂ O |
| Subatmospheric pressure: | $P_{\text{aw}} < -10$ cmH ₂ O |
| Audio pause countdown clock: | 120 to 0 seconds |

Ventilator Components

Flow transducer

| | |
|-----------|---|
| Type: | Variable orifice flow sensor (autoclavable) |
| Location: | Inspiratory outlet and expiratory inlet |

Oxygen sensor

| | |
|-------|---|
| Type: | Optional galvanic fuel cell or paramagnetic with Airway Module option |
|-------|---|

Ventilator screen

| | |
|---------------|------------|
| Display size: | 15 inch |
| Pixel format: | 1024 x 768 |

Battery backup

| | |
|---------------|--|
| Backup power: | Battery time is 90 minutes when fully charged, which supports full system functionality and ventilation. |
| Battery type: | Internal rechargeable sealed lead acid |

Communication ports

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|--|
| RS-232C compatible serial interface |
| Ethernet |
| Datex-Ohmeda device interface solutions port |
| USB port |
| VGA Output |

Anesthetic Agent Delivery

Delivery

| | |
|----------------------|--|
| Vaporizers: | Tec™ 6 Plus, Tec 7 |
| Number of positions: | 2 |
| Mounting: | Tool-free installation Selectatec™ manifold interlocks and isolates vaporizers |

Airway Modules

General

| | |
|--|--------------------------------------|
| E-sCAiO, E-sCAiOV, N-CAiO | |
| Size (HxWxD), excluding water trap: | 113 x 38 x 205 mm/4.4 x 1.5 x 8.1 in |
| Weight: | 0.7 kg/1.5 lb |
| Sampling rate: | 120 mL/min ±20 mL |
| Automatic compensation for atmospheric pressure variation (495 to 795 mmHg) temperature and CO ₂ /N ₂ O and CO ₂ /O ₂ collision broadening effect. Parameter display update interval typically breath-by-breath. Functional alarms for blocked sample line, D-fend check and D-fend replacement. | |

Non-disturbing gases:

| | | |
|---|-----------------------------|--|
| Ethanol, acetone, isopropanol, methane, nitrogen, nitric oxide, carbonmonoxide, water vapor, freon R134A (for CO ₂ , O ₂ and N ₂ O): | Maximum effect on readings: | CO ₂ < 0.2 vol %; O ₂ , N ₂ O < 2 vol %, AA < 0.15 vol% |
|---|-----------------------------|--|

Carbon dioxide (CO₂)

| | |
|---------------------|---|
| EtCO ₂ : | End-tidal CO ₂ concentration |
| FiCO ₂ : | Inspired CO ₂ concentration |

CO₂ waveform

| | |
|--|---------------------------------------|
| Measurement range: | 0 to 15% (0 to 15 kPa, 0 to 113 mmHg) |
| Accuracy: | ±0.2 vol % + 2 % of reading |
| Datex-Ohmeda infrared sensor | |
| Adjustable low and high alarm limits for EtCO ₂ and FiCO ₂ | |

Respiration rate (RR)

| | |
|--|---------------------------------|
| Measurement range: | 4 to 100 breaths/min |
| Detection criteria: | 1% variation in CO ₂ |
| Adjustable low and high alarm limits for respiration rate; alarm for apnea | |

Patient Oxygen (O₂)

| | |
|--------------------------------------|--|
| FiO ₂ : | Inspired O ₂ concentration |
| EtO ₂ : | End-tidal O ₂ concentration |
| FiO ₂ -EtO ₂ : | Inspired-expired difference |

O₂ Measurement

| | |
|---|--------------------------|
| Measurement range: | 0 to 100% |
| Accuracy: | ±1 vol % +2 % of reading |
| Datex-Ohmeda differential paramagnetic sensor | |
| Adjustable low and high alarm limits for FiO ₂ and EtO ₂ ; alarm for FiO ₂ < 18% | |

Nitrous Oxide (N₂O)

Measurement range: 0 to 100%
Accuracy: ±2 vol % +2 % of reading

Anesthetic Agent (AA)

Halothane, Isoflurane, Enflurane

Measurement range: 0 to 6%
Accuracy: ±(0.15 vol% +5% of reading)

Sevoflurane

Measurement range: 0 to 8%
Accuracy: ±(0.15 vol% +5% of reading)

Desflurane

Measurement range: 0 to 20%
Accuracy: ±(0.15 vol% +5% of reading)

Waveform displayed

MAC value displayed (Airway Gas Option modules)

MACage value displayed (CARESCAPE modules)

Identification threshold: 0.15 vol%**

Agent mixture detection

Adjustable high and low alarm limits for EtAA, FiAA

Patient Spirometry™ (optional)

Pressure-volume loop

Pressure-flow loop

Flow-volume loop

Airway pressure and flow waveforms

Adjustable low and high alarm limits for P_{peak}, PEEP_{tot} and MV_{exp}

Alarms for MV_{exp} << MV_{insp} and for MV_{exp} low. Detection through D-lite™ or Pedi-lite™ flow sensor and gas sampler with following specifications:

CARESCAPE Airway Modules

| | D-lite(+) | Pedi-lite(+) |
|-------------------|---------------------|---------------------|
| Respiration rate: | 4 to 35 breaths/min | 4 to 70 breaths/min |

Tidal volume

| | | |
|--------------------|----------------|-------------|
| Measurement range: | 150 to 2000 mL | 5 to 300 mL |
| Accuracy**: | ±6% or 30 mL | ±6% or 4 mL |

Minute volume

| | | |
|--------------------|---------------|----------------|
| Measurement range: | 2 to 20 L/min | 0.1 to 5 L/min |
|--------------------|---------------|----------------|

Airway pressure

Measurement range: -20 to +100 cmH₂O
Accuracy**: ±1 cmH₂O
Display units: cmH₂O, mmHg, kPa, mbar, hPa

Flow

| | | |
|--------------------|-------------------|-----------------|
| Measurement range: | -100 to 100 L/min | -25 to 25 L/min |
|--------------------|-------------------|-----------------|

I:E

Measurement range: 1:4.5 to 2:1

Compliance

| | | |
|--------------------|--------------------------------|--------------------------------|
| Measurement range: | 4 to 100 mL/cmH ₂ O | 1 to 100 mL/cmH ₂ O |
|--------------------|--------------------------------|--------------------------------|

Airway resistance

Measurement range: 0 to 200 cmH₂O/L/s

Sensor specifications

| | D-lite/ D-lite(+) | Pedi-lite/ Pedi-lite(+) |
|-------------------|------------------------|----------------------------|
| Dead Space: | 9.5 mL | 2.5 mL |
| Resistance | | |
| at 30 L/min: | 0.5 cmH ₂ O | |
| at 10 L/min: | | 1.0 cmH ₂ O |

Electrical Specifications

Current leakage

| | |
|------------|---------|
| 100/120 V: | < 300µA |
| 220/240 V: | < 500µA |

Power

Power input: 100-120 Vac, 50/60 Hz
220-240 Vac, 50/60 Hz
120/220-240 Vac ± 10%, 50-60 Hz

Power cord:

| | |
|---------|--|
| Length: | 5 m/16.4 ft |
| Rating: | 10A @ 220-240 Vac or 15A @ 100-120 Vac 10A @ 120/220-240 Vac |

Inlet modules

| | |
|------------------|-----|
| 100/120 V: | |
| Without outlets: | 2A |
| With outlets: | 10A |
| 220/240 V: | |
| Without outlets: | 1A |
| With outlets: | 5A |

Outlet modules (optional)

100/120 V:
3 outlets on side, 1-3A, 2-2A, individual breakers, isolation transformer (optional)

220/240 V:
3 outlets on side, 1-2A, 2-1A, individual breakers, isolation transformer (optional)

120/220-240 V:
No outlets

**Typical value

Pneumatic Specifications

Auxiliary O₂ (optional)

| | |
|-------------------------------------|------------------------|
| Connection: | 7-10 mm hose barb port |
| O ₂ concentration range: | 100% O ₂ |
| Flow range: | 0 to >10 L/min |

Auxiliary common gas outlet (optional)

| | |
|------------|---------------------------|
| Connector: | ISO 22 mm OD and 15 mm ID |
|------------|---------------------------|

Gas supply

| | |
|-----------------------|--|
| Pipeline input range: | 280 kPa to 600 kPa (41 psig to 87 psig) |
| Pipeline connections: | DISS-male, DISS-female, AS4059, S90-116, or NIST All fittings available for O ₂ , N ₂ O, and Air, and contain pipeline filter and check valve. Secondary O ₂ pipeline inlet available. |
| Cylinder input: | Pin indexed in accordance with CGA-V-1 or DIN-477 (nut and gland); contains input filter and check valve. Large cylinder kit available for O ₂ and N ₂ O (with DIN-477). |

Note: Maximum 3 cylinders

| | |
|---|--|
| Primary regulator diaphragm minimum burst pressure: | 2758 kPa/400 psig |
| Primary regulator nominal output: | ≤ 345 kPa/50 psig Pin indexed cylinder connections ≤ 414 kPa/60 psig DIN-477 cylinder connections |

O₂ controls

| | |
|-----------------------|---|
| Method: | N ₂ O shut off with loss of O ₂ pressure |
| Supply failure alarm: | < 252 kPa (36.55 psig) |
| O ₂ flush: | Range: 25 to 75 L/min |

Fresh gas

| | |
|--|---|
| Flow range: | |
| for O ₂ and Air: | 0 and 100 mL/min to 15 L/min (minimal flow capable) |
| for N ₂ O: | 0 and 100 mL/min to 10 L/min |
| Pneumatic Total Flow Tube: | 1 to 10 L/min |
| Measurement accuracy | |
| for O ₂ , Air and N ₂ O: | ±6% of measured value, or ±25 mL/min (larger of) |
| for Total Flow tube: | ±5% of full scale (larger of) at 100% O ₂ |

| | |
|-------------------------------------|--|
| O ₂ concentration range: | 21% to 100% when Air is available |
| O ₂ Cell accuracy: | ±2.5% plus 2.5% of reading |
| Compensation: | Temperature and atmospheric pressure compensated to standard conditions of 20°C and 101.3 kPa |
| Hypoxic guard: | Mechanical Link-25: Provides a nominal minimum 25% concentration of oxygen in O ₂ /N ₂ O mixture. |

Materials

All materials in contact with patient breathing gases are not made from natural rubber latex.

Environmental Specifications

System operation

| | |
|--------------|---|
| Temperature: | 10° to 40°C (50° to 104°F) |
| Humidity: | 15 to 95% relative humidity (non-condensing) |
| Altitude: | -440 to 3565 m (500 to 800 mmHg) -440 to 4000 m (without Airway Module) (475 to 800 mmHg) |

System storage

| | |
|----------------------|--|
| Temperature: | -25° to 60°C (-13° to 140°F) |
| Humidity: | 15 to 95% relative humidity (non-condensing) |
| Altitude: | -440 to 4880 m (425 to 800 mmHg) |
| Oxygen cell storage: | -15° to 50°C (5° to 122°F) 10 to 95% relative humidity 500 to 800 mmHg |

Electromagnetic compatibility

| | |
|------------------------------------|---|
| Immunity: | Complies with all applicable requirements of EN 60601-1-2 |
| Emissions: | CISPR 11 group 1 class A |
| Approvals: | AAMI ES60601-1, CSA C22.2 #601.1, EN/IEC 60601-1, ISO 80601-2-13 |
| European Notified Body CE Mark: | CE0197 |

Breathing Circuit Specifications

Carbon dioxide absorbent canister

Absorbent capacity: Reusable canister 1370 mL/1150 g
Disposable canister 1437 mL/1200 g

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 (15 mm ID), ROW
22 mm ID, Australia

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: 0.5 to 70 cmH₂O
Tactile knob indication at: 30 cmH₂O and above
Adjustment range of rotation: 0.5 to 30 cmH₂O (0 to 230°)
30 to 70 cmH₂O (230 to 330°)

Materials

All materials in contact with exhaled patient gases are autoclavable, except O₂ cell, and Airway Modules. All materials in contact with patient gas are not made from natural rubber latex.

Breathing circuit parameters

Compliance:
Bag mode: 1.81 mL/cmH₂O (filled disposable absorber canister)
1.74 mL/cmH₂O (filled reusable absorber canister)
Mechanical mode: Automatically compensates for compression losses within the absorber and bellows assembly
Volume: 2006 mL Ventilator side
500 mL Bag side
1004 mL Reusable canister
985 mL Disposable canister

Expiratory resistance in bag mode:

| Flow rate | P_{exp} | P_{exp} |
|-----------|-----------------------------|---------------------------|
| | Absorber canister Installed | Absorber canister Removed |
| 5 L/min | 0.57 cmH ₂ O | 0.57 cmH ₂ O |
| 30 L/min | 2.47 cmH ₂ O | 2.47 cmH ₂ O |
| 60 L/min | 5.60 cmH ₂ O | 5.60 cmH ₂ O |

Note: Values include patient circuit tubing and wye piece (0.65 cmH₂O at 60 L/min)

Anesthetic gas scavenging

| AGSS Type | Hospital extract system required | Machine connection |
|------------------------|--|--|
| High vacuum, low flow: | High vacuum 36 +/- 3 L/min @ 12 inHg (305 mmHg) | SIS evac |
| High vacuum, low flow: | High vacuum 25- 30 L/min @ 12 inHg (305 mmHg) | DISS evac |
| Low vacuum, high flow: | Low vacuum 50 to 80 L/min ISO 1H | BSI 30 mm threaded |
| Low vacuum, low flow: | Low vacuum 25 to 50 L/min ISO 1L | 12.7 mm hose barb, 25 mm hose barb, or 30 mm ISO taper |
| Passive: | Passive system with air break | 30 mm/1.2 in M ISO taper |

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Not for sale in all markets.

Please check with your sales representative.

Always refer to the complete instructions manuals before use.

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This document applies to Carestation 620 A1

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GE provides transformational medical technologies and services that are shaping a new age of patient care. Our broad expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies, performance improvement and performance solutions services help our customers to deliver better care to more people around the world at a lower cost. In addition, we partner with healthcare leaders, striving to leverage the global policy change necessary to implement a successful shift to sustainable healthcare systems.

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