

CCV | COMPREHENSIVE CARE VENTILATOR



Gradian Health Systems

The Gradian CCV is built to ventilate critically-ill patients wherever they present—with up to 21 hours of battery power and portability features to enable ease of use throughout the continuum of critical care.



PORTABILITY FEATURES

Bed hooks, handle, and shoulder strap for bedside use and transportation, plus a sturdy rolling cart for intra-hospital transfers.

USER-FRIENDLY INTERFACE

Tactile, straightforward interface with programmable ventilation profiles for specific disease states.

GAS SOURCE FLEXIBILITY

Integrated compressor and gas mixer, plus hoses and adapters for most oxygen and air sources

OXYGEN RESERVOIR

External oxygen reservoir that allows for use with an oxygen concentrator or flowmeter, if high-pressure oxygen sources are not available.

EXTERNAL BATTERY

Rugged battery pack providing an additional 14 hours of battery back-up (for a total of 21 hours).

CE-marked & FDA cleared

The Gradian CCV fulfills or exceeds most of the essential specifications recommended by the World Health Organization for ICU, transport, and sub-acute ventilators for COVID-19 care.

SPECIFICATIONS

PATIENT RANGE

Infant/Pediatric (≥ 5 kg) – Adult

BREATHING CIRCUITS

Single-limb, reusable (Adult and Pediatric)

MODES

Ventilation Modes:

- Volume Assist Control
- Pressure Assist Control
- CPAP & BiPAP
- Volume SIMV
- Pressure SIMV

Quick Start Modes: • Adult & Child (programmable)

Custom Modes: • Three (3) programmable ventilation setting profiles available for quick recall

ENVIRONMENT

Shock: 100 G-Force

Vibration: IEC 60068-2-6

Operating: $-18^{\circ}\text{C} - 50^{\circ}\text{C}$
5 – 95% RH

Storage : $-40^{\circ}\text{C} - 60^{\circ}\text{C}$

Ingress : IP22

CONTROL SETTINGS

Tidal Volume: 40 – 2000 mL

Respiratory Rate: 0 or 5 – 60 BPM

Inspiratory Time: 0.5 – 2.0 sec

PEEP/CPAP: 0 – 25 cmH₂O

Pressure Support: 0 – 25 cmH₂O*

Flow: 5 – 60 L/min (≥ 80 L/min possible in some modes)

Target Pressure: 15 – 55 cmH₂O

Trigger Sensitivity: -5 – -1 cmH₂O

Pressure Relief: ≤ 85 cmH₂O

Set %O₂: 21% – 100%

Flow Wave Pattern: Square or descending

Settings Lock: On/Off

MONITORED PARAMETERS

Measured:

- Airway Pressure
- Delivered Tidal Volume
- Spontaneous Breath Rate

Calculated:

- I:E Ratio
- Flow rate
- FiO₂

ALARMS

High Airway Pressure: 10 – 55 cmH₂O

Low Airway Pressure: 5 – 15 cmH₂O

Apnea: After 20 sec, enters apnea mode

Low Source O₂ / Air: Triggers at 40 psi

System Failure: Malfunction alert

Critical Battery: Approx. 20 min battery remaining

Audible Alarm: ≥ 70 dB

Silence/Reset: 110 sec

GAS SOURCES

Oxygen Input:

- High pressure port (0 – 80 psi)
- Low pressure barb (< 10 psi)
- Oxygen reservoir for low-flow sources

Air Input:

- Room air entrainment (internal compressor)
- High pressure port (40 – 80 psi) DISS

Gas Mixing: • Integrated oxygen/air mixer

BATTERY PARAMETERS

Internal Battery: Up to 7 hours

External Battery: Up to 14 hours

Battery Type: Sealed lead acid

POWER REQUIREMENTS

Mains: 110 – 240 VAC, 50/60 Hz, $< 1\text{A}$

HUMIDIFICATION

Active: Heated humidifier with reusable accessories

Passive: Compatible with heat/moisture exchanging filters

ACCESSORIES

Rolling Stand: Two baskets, handle, locking wheels

Portability Features: Handle, hooks, shoulder strap

Pulse Oximeter: Hand-held (adult and pediatric probes)

HME Filters: Starter kit (adult and pediatric)

Gas Source Adapters: BS, AFNOR, NIST (oxygen and air)

DIMENSIONS (no stand)

Width: 34 cm (13.3 in)

Depth: 13 cm (5.3 in)

Height: 35 cm (13.8 in)

Weight: 8.5 kg (18.8 lb)

GUARANTEED WITH EVERY PURCHASE

3-YEAR WARRANTY:

- Annual preventive maintenance checks
- Local storage of spare parts for easy access
- 60+ Gradian-certified technicians
- Managed from Nairobi service hub

HIGH-QUALITY TRAINING:

- Covers product & clinical refresher topics
- Utilizes high-fidelity simulation, real-world clinical scenarios
- Is offered in-person & online through the Gradian Training Resource Center