# **The Gradian CCV**

# **Product Features & Specifications**



The Gradian CCV is a comprehensive care ventilator that provides mechanical ventilation in a wide variety of settings—including those with an unreliable supply of power or oxygen. The CCV offers management options for post-op, intensive, and critical care, and and facilitates ventilation during transport within and between hospitals. It comes with installation, user training, and a three-year service warranty carried out by certified local technicians.



### **Portability Features**

Bed hooks, handle, and shoulder strap for convenient use and transportation in any setting

## **Fully-Automatic Ventilator**

Pneumatically-driven mechanical ventilator with 7 hours of rechargeable internal battery

### **Internal Compressor**

Built-in air compressor that uses room air to supplement existing oxygen sources or ventilate patients when medical oxygen is unavailable

## **Breathing Circuit**

Durable, reusable, single-limb silicone patient circuit

## Oxygen Reservoir

Reservoir enabling use with low-flow oxygen sources like a concentrator or flowmeter

## **External Battery**

Hot-swappable, rugged battery providing additional 14 hours of operating time (up to 21 hours in total)

## **Rolling Stand & Base**

Sturdy aluminum frame with handle and basket, mounted on a no-tip base with 5 durable casters

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The Gradian CCV is CE-certified and has been cleared by the U.S. FDA.

#### **Patient Range**

Infant/Pediatric (≥ 5 kg) – Adult

### **Power Requirements**

AC Voltage: 110 - 240 VAC, 50/60 Hz, max 1A



**Note:** The Gradian CCV comes with reusable breathing circuits.

### **Control/Settings**

**Quick Start Modes:** Adult & Child (programmable)

Ventilation Modes: • (Pressure or Volume) Assist Control

• (Pressure or Volume) SIMV

• CPAP & Bi-PAP

• Custom modes (3) with programmable ventilation settings available for quick recall

Mode Switch: Seamless transition between pressure and

volume modes

Tidal Volume: 40 – 2000 mL

Respiratory Rate: 0 or 5 – 60 BPM

**Inspiratory Time:** 0.5 – 2.0 sec

**PEEP/CPAP:**  $0 - 25 \text{ cmH}_2\text{O}$ 

Pressure Support (PS):  $0 - 25 \text{ cmH}_2\text{O}^*$ 

Flow: 5 - 60 L/min (flows  $\ge 80$  L/min possible in PS

mode, CPAP & demand flows)

**Pressure Control** 

(Target Pressure):  $15 - 55 \text{ cmH}_2\text{O}$ 

Trigger Sensitivity: -5 – -1 cmH<sub>2</sub>O

Safety Pressure Relief: ≤ 85 cmH<sub>2</sub>O

**Set FiO<sub>2</sub>:** 21% – 100%

Flow Wave Pattern: Square or descending\*\*

Settings Lock: On/Off

\*PEEP + PS cannot exceed 25 cmH<sub>2</sub>O; \*\*Based on mode selected

#### **Gas Source**

Air/Oxygen Mixer: Integrated

Oxygen Input: 0 – 80 psi for cylinder, pipeline, or concentrator

connection or low-pressure (< 10 psi) barb connection

for cylinder during transport

Air Input: 40 – 80 psi DISS connection or room air entrainment

via internal compressor

### **Battery Parameters**

Battery Composition: Sealed lead acid

Internal Battery: Up to 7 hours

External Battery: Up to 14 hours

#### **Environmental**

Shock: 100 G-Force

Vibration: To IEC 60068-2-6

Operating -18°C - 50°C Temperature: (0°F - 122°F)

**Storage** -40°C - 60°C

**Temperature:** (-40°F – 140°F)

Ingress Protection: IP22

#### **Alarms**

High Airway Pressure: 10 - 55 cmH<sub>2</sub>O

Low Airway Pressure: 5 – 15 cmH<sub>2</sub>O

Apnea: After 20 sec, activates

apnea mode

Low Source O<sub>2</sub>: Triggers at 40 psi

Low Source Air: Triggers at 40 psi

System Failure: Malfunction alert

Critical Battery: Approx. 20 min of

battery charge remaining

Audible Alarm: ≥ 70 dB

Silence/Reset: 110 sec

#### **Dimensions** (without rolling cart)

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)

#### **Signal Connections**

Remote Alarm: ¼" phone jack to connect to nurse call or remote system, normally open/closed

#### **Monitored Parameters**

#### **Measured Parameters:**

• Airway Pressure (Peak, Base)

• Delivered Tidal Volume

Spontaneous Breath Rate

• Internal Battery Level

External Battery Level

### **Calculated Parameters:**

• I:E Ratio

• I.E Hallo

Flow rate

• FiO<sub>2</sub>