

EMMA™ Capnograph

Quick Reference Guide



Product Description

Alarm Limits

Alarm limits and visual alarm status indicator, silence active alarms for two minutes

Capnogram

14.4 second sweep of CO₂ values

Power On Button

Warm-up time to full accuracy in 15 seconds

EMMA available in mmHg or kPa



End-tidal Carbon Dioxide

Quantitative EtCO₂ is updated every breath

Respiration Rate

RR is displayed after two breaths and updated every breath

Airway Adapter

Available in adult/pediatric and infant sizes

Basic Operation

A. Select the appropriate adapter: Adult/pediatric or Infant

B. Snap the Airway Adapter into the EMMA
It will click into place when properly seated

C. Power on:

- Press and hold the Power On button
- Begin use when the EtCO₂ value is 0

D. To power off your device, choose one of the following:

- Remove the airway adapter, the device will power off automatically after 15 seconds
- Stop monitoring the patient, the device will turn off automatically if no breath is detected for 2 minutes after the alarm silence button is pressed



EMMA Connections

Connects to most closed circuit airways such as:

- Bag valve mask
- Supraglottic airway
- Endotracheal tube
- Laryngeal mask

Connects to most ventilator connections such as:

- Manual resuscitator
- Semi-automatic or automatic resuscitator
- Transport ventilator
- Selective CPAP systems
- Mechanical ventilator (ICU/OR)

Bag Valve Mask



Supraglottic Airway



Endotracheal Tube



Assess Ventilation & Intubation

Clinical literature identifies that normal EtCO₂ levels may be between 30–43mmHg¹

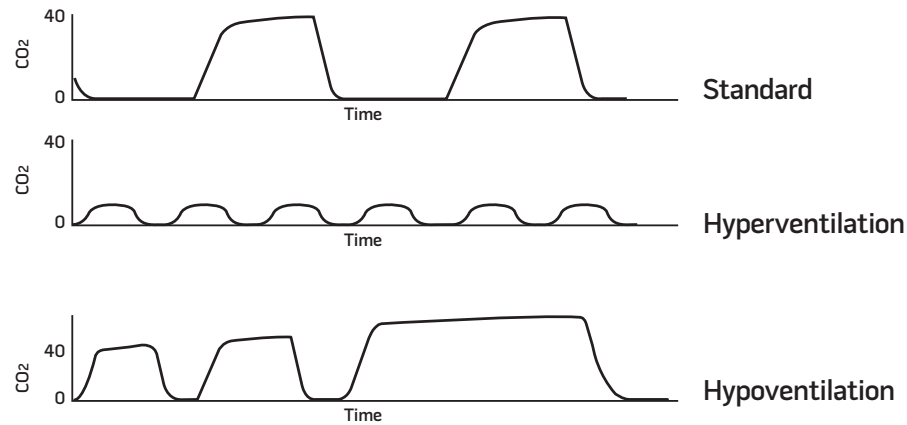


Clinical Applications

Clinical literature identifies the use of Capnography for the following conditions:

- Hypoventilation is typically seen with patients with EtCO₂ of 50mmHg or higher²
- Hyperventilation is typically seen with patients with EtCO₂ of 30mmHg or lower³
- Capnography helps verify endotracheal tube placement and can help discover any endotracheal tube obstructions, such as dislodgment or displacement⁴

Capnography Waveforms⁵



References

- 1 Nicki Gilboy, RN, MS, CEN, FAEN, Michael R. Hawkins, CRNA, MS. Noninvasive Monitoring of End-Tidal Carbon Dioxide in the Emergency Department. *Advanced Emergency Nursing Journal*: Vol. 28, No. 4, pp. 301–313
- 2 Franco Cavaliere, et al. Effects of acute hypoventilation and hyperventilation on exhaled carbon monoxide measurement in healthy volunteers. *BMC Pulmonary Medicine*: 23 December 2009
- 3 Daniel P. Davis, et al. Ventilation Patterns in Patients with Severe Traumatic Brain Injury Following Paramedic Rapid Sequence Intubation. *Neurocritical Care*: 2005
- 4 Scott DeBoer, et al. Verification of Endotracheal Tube Placement: A Comparison of Confirmation Techniques and Devices. *Emergency Nurses Association*: 2003
- 5 Krauss, Baruch. Advances in the Use of Capnography for Nonintubated Patients. *IJEM* Vol 8, No 3, Nov 2008

Battery Replacement

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3



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