



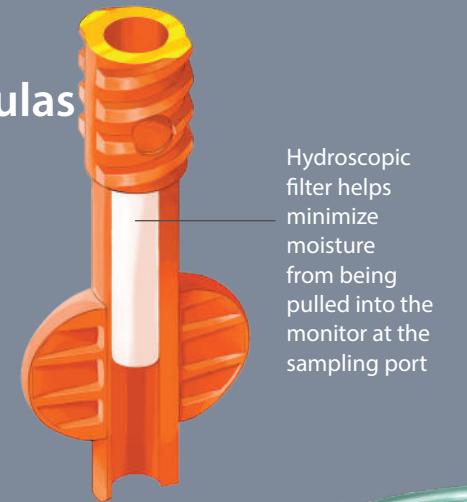
## ETCO<sub>2</sub>/O<sub>2</sub> Sampling Cannulas with Filter Inside

SunMed's VentFLO™ ETCO<sub>2</sub>/O<sub>2</sub> sampling cannulas deliver oxygen while capturing an end tidal gas sample, even with simultaneous insufflation of oxygen. These ETCO<sub>2</sub>/O<sub>2</sub> cannulas also feature a bright orange reflective style connector, compatible with Microstream™, Capnostream™ and Oridion™ capnography monitors.

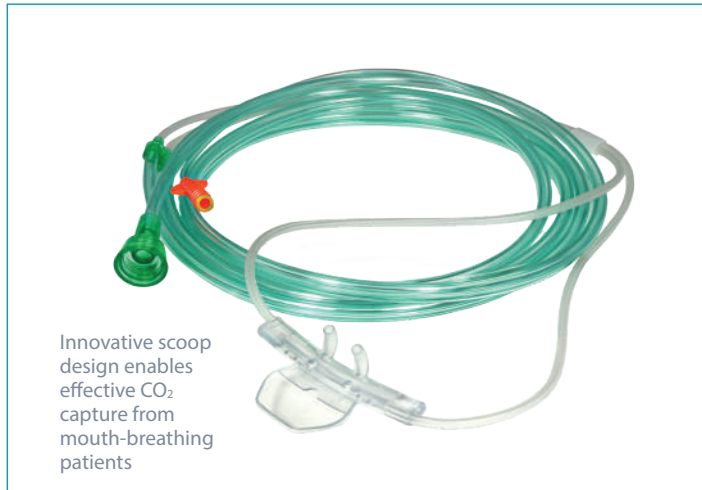
## What makes VentFLO™ ETCO<sub>2</sub>/O<sub>2</sub> sampling cannulas the right choice in capnography sampling?

Sidestream capnography sampling with a modified nasal cannula that can simultaneously deliver O<sub>2</sub> and sample CO<sub>2</sub> can be susceptible to blockage from water vapor or secretions—but risk can be reduced when a filter is introduced.

SunMed's VentFLO™ ETCO<sub>2</sub>/O<sub>2</sub> cannulas feature a **hydropscopic filter** inside the reflective connector. The use of this filter helps minimize the potential that water vapor or secretions can have on the capnography waveform output. The result is a waveform that is as close to textbook standard as possible.



Hydropscopic filter helps minimize moisture from being pulled into the monitor at the sampling port



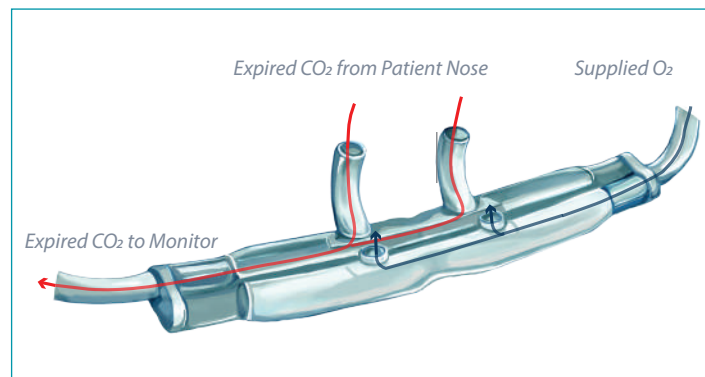
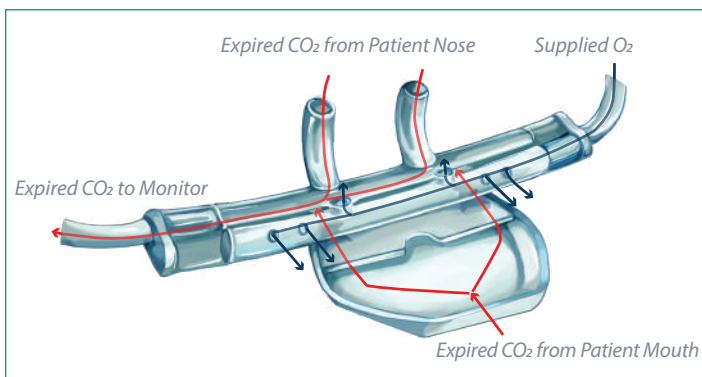
Innovative scoop design enables effective CO<sub>2</sub> capture from mouth-breathing patients

ETCO<sub>2</sub>/O<sub>2</sub> ORAL/NASAL SAMPLING CANNULA



Curved nares made of ultra-soft material

ETCO<sub>2</sub>/O<sub>2</sub> NASAL SAMPLING CANNULA



## The importance of the waveform in capnography.

End-tidal carbon dioxide (ETCO<sub>2</sub>) monitoring provides valuable information about CO<sub>2</sub> production and ventilation. Also called capnography, this monitoring provides a breath-by-breath analysis and continuous reading of ventilatory status including early signs of respiratory compromise, cardiac perfusion changes, proper placement of endotracheal tube, and ventilator circuit integrity. Each of these is translated by the capnography waveform.

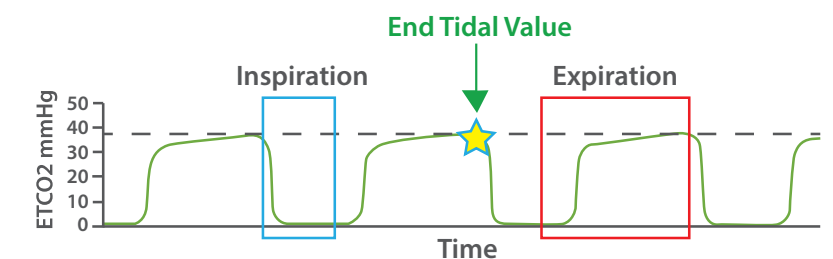
The shape of the waveform should normally be a rectangle with rounded corners. different waveform shapes can indicate different conditions. When a patient is breathing out CO<sub>2</sub>, the graph inclines. When a patient breathes in, the graph declines. The waveform should return to the baseline, and frequency should match the patient's respiratory rate. The height of the waveform should be between 35 mmHg and 45 mmHg, which is a normal ETCO<sub>2</sub> reading.



CAT#	DESCRIPTION	LENGTH	PK
5107F-SE	Adult ETCO <sub>2</sub> /O <sub>2</sub> Nasal Cannula	7'	25
5110F-SE	Adult ETCO <sub>2</sub> /O <sub>2</sub> Nasal Cannula	10'	25
5114F-SE	Adult ETCO <sub>2</sub> /O <sub>2</sub> Nasal Cannula	14'	25
5207F-SE	Pediatric ETCO <sub>2</sub> /O <sub>2</sub> Nasal Cannula	7'	25
5210F-SE	Pediatric ETCO <sub>2</sub> /O <sub>2</sub> Nasal Cannula	10'	25
5214F-SE	Pediatric ETCO <sub>2</sub> /O <sub>2</sub> Nasal Cannula	14'	25
5707F-SE	Adult ETCO <sub>2</sub> /O <sub>2</sub> Oral/Nasal Cannula	7'	25
5710F-SE	Adult ETCO <sub>2</sub> /O <sub>2</sub> Oral/Nasal Cannula	10'	25
5714F-SE	Adult ETCO <sub>2</sub> /O <sub>2</sub> Oral/Nasal Cannula	14'	25

- Hydropscopic filter inside reflective connector to help minimize moisture
- Simultaneously delivers oxygen while obtaining CO<sub>2</sub> sampling during spontaneous breathing
- Compatible with Microstream™, Capnostream™ and Oridion™ capnography monitors
- Soft-Ears™ material helps ensure superior patient comfort
- Designed to prevent mixing of fresh oxygen with CO<sub>2</sub>
- 3-Channel tubing prevents kinking
- Available in three tubing lengths, each with Fits-All O<sub>2</sub> connector

Microstream, Capnostream, and Oridion are trademarks of Oridion Medical 1987, Ltd. related to products marketed by Medtronic.

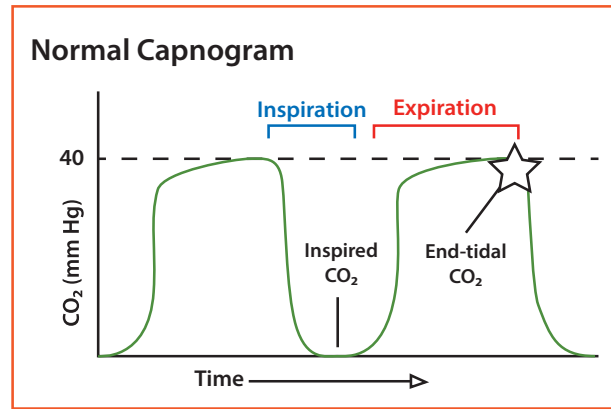


# Normal and Abnormal ETCO<sub>2</sub> Waveform Patterns

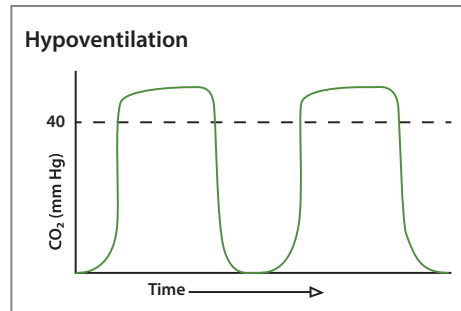
## NORMAL

A capnography waveform depicts the concentration of CO<sub>2</sub> in the breath, and has a mostly uniform square shape with rounded corners and a consistent pattern. The frequency of the waveform is calculated to determine respiratory rate. The breathing rate of healthy adults occurs approximately every 3-5 seconds, which equates to a 12-20 breath per minute respiratory rate. The baseline of the waveform is normally at zero because it contains less than 0.5% CO<sub>2</sub>.

At the completion of a normal breath intake, the baseline will fall to the baseline; and at the end of the breath expiration, a normal waveform should be between 35-45 mmHg at the peak. The very peak of the waveform is the ETCO<sub>2</sub> reading.

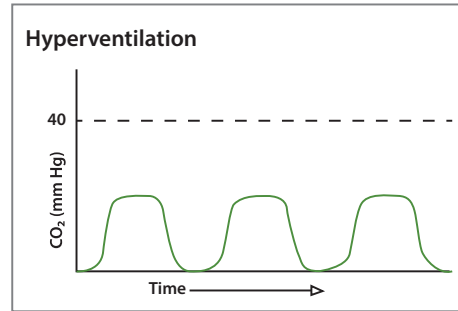


## ABNORMAL



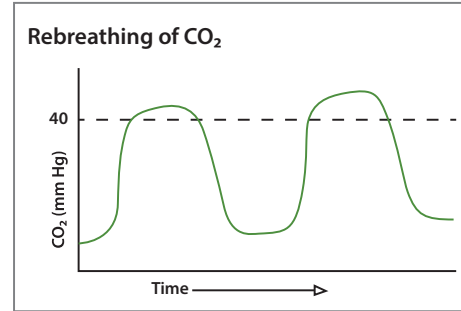
### Hypoventilation

The trademark sign for hypoventilation is an elevated CO<sub>2</sub> level above 45 mmHg in the presence of normal circulation and metabolism.



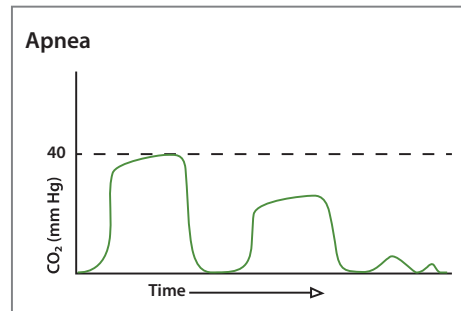
### Hyperventilation

The primary indicator of hyperventilation is a decreased CO<sub>2</sub> level below 35 mmHg in the presence of normal circulation and metabolism.



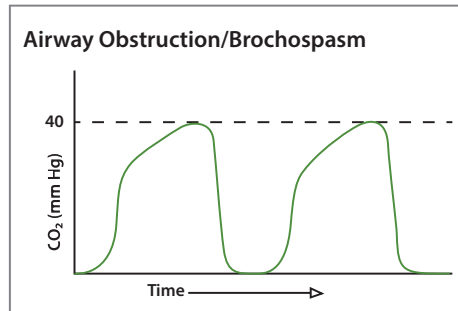
### Rebreathing of CO<sub>2</sub>

The pattern for rebreathing CO<sub>2</sub> is a gradual rise in the baseline.



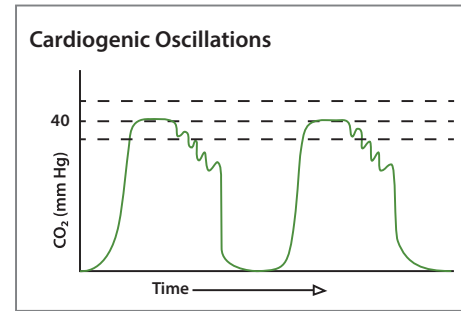
### Apnea

Waveform quickly falls to baseline. No breath for 10 seconds or longer.



### Airway Obstruction/Brochospasm

A common sign of airway obstruction is indicated by a shark fin shaped waveform while occurring normally once every three seconds or less.



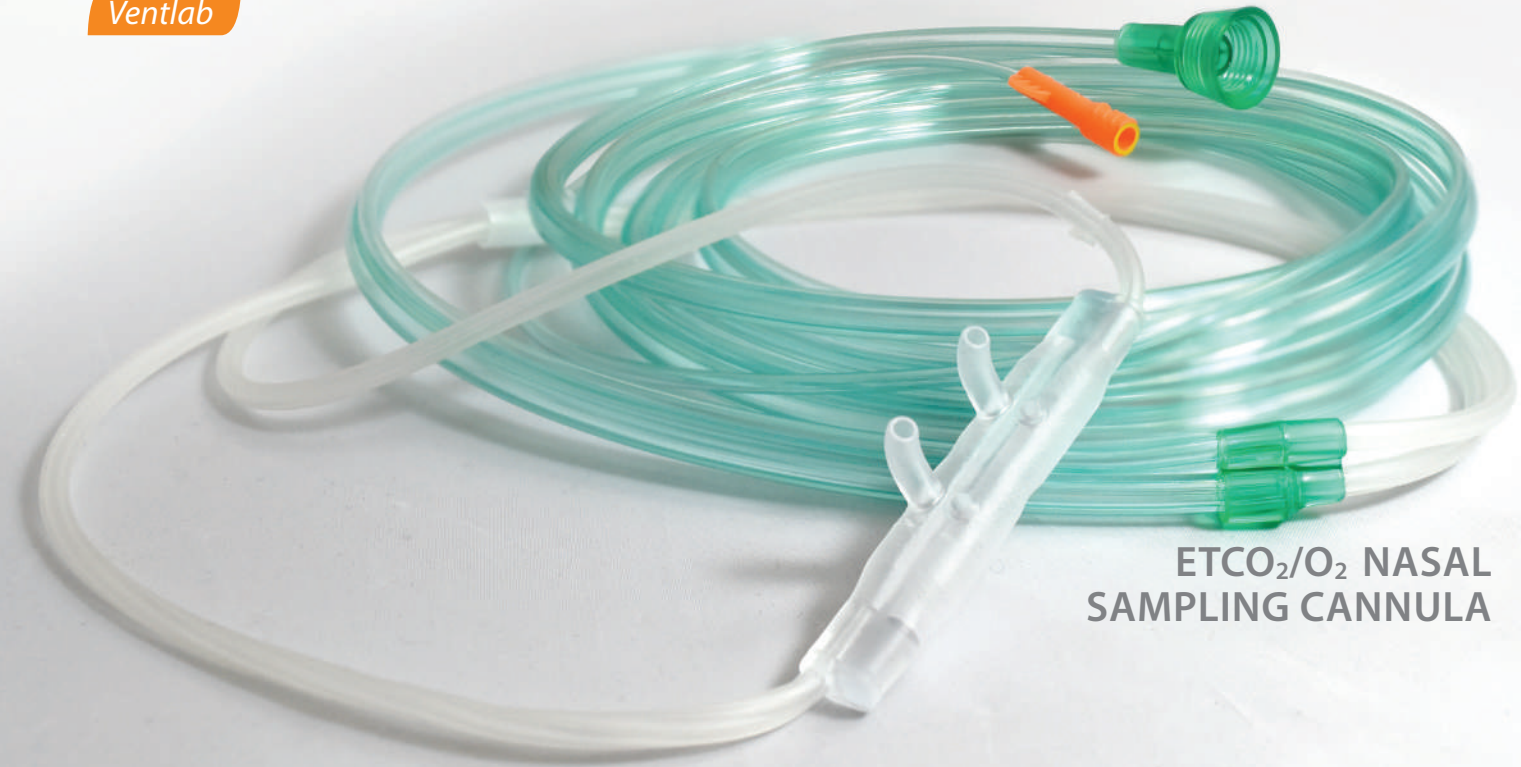
### Cardiogenic Oscillations

Downslope of waveform creates a ripple effect during low frequency ventilation.

SM-REF-0081 Rev 1

# VentFLO

Ventlab



ETCO<sub>2</sub>/O<sub>2</sub> NASAL SAMPLING CANNULA



ETCO<sub>2</sub>/O<sub>2</sub> ORAL/NASAL SAMPLING CANNULA



VentFLO's reflective connector houses a hydroscopic filter - unique to any other ETCO<sub>2</sub>/O<sub>2</sub> cannula available - that helps minimize moisture from being pulled into the sampling port.

MMSI



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