

Benefits of XFlow™ and XSum™

An Embla proprietary software algorithm has been developed to derive flow from the XactTrace™ respiratory inductive plethysmograph belt signals. The algorithm creates two values, or traces, called XFlow and XSum.

XactTrace Belts with XFlow and XSum Give You:

- More accurate measurement of respiratory movement and effort
- More reliability in measuring flow
- More flexibility in measuring flow

More Accuracy

XactTrace, featuring Respiratory Inductive Plethysmograph (RIP) technology, delivers a highly sensitive and reliable respiratory effort tracing. XactTrace measures a cross sectional area of the thorax and abdomen and generates a precise semi-quantitative signal that is a measure of the shifts in chest or abdominal circumference. The XSum algorithm then gives you an accurate estimate of the volume in the lungs.

More Reliability

With Embla devices, flow can now be measured in 3 different ways: cannula, thermistor and XFlow. These different methods can serve as backup for each other. If, for example, you use XactTrace belts with a cannula and the cannula falls off, you can still get a flow signal from XFlow. The XFlow signal also continues regardless of whether the patient is breathing through the nose or mouth.

More Flexibility

Using XFlow also means you can get the flow information you need even when it is not possible to use a typical flow sensor. This is helpful, for example, when using a CPAP mask, EtCO₂ sensor or when working with patients who may find typical flow sensors difficult to tolerate.

XFlow is also ideal for titration. It can be difficult to measure flow when the patient is breathing into a mask. Derived from the two respiratory belt signals, XFlow can fully represent the patient's ventilation patterns without interfering with the CPAP mask or headgear.

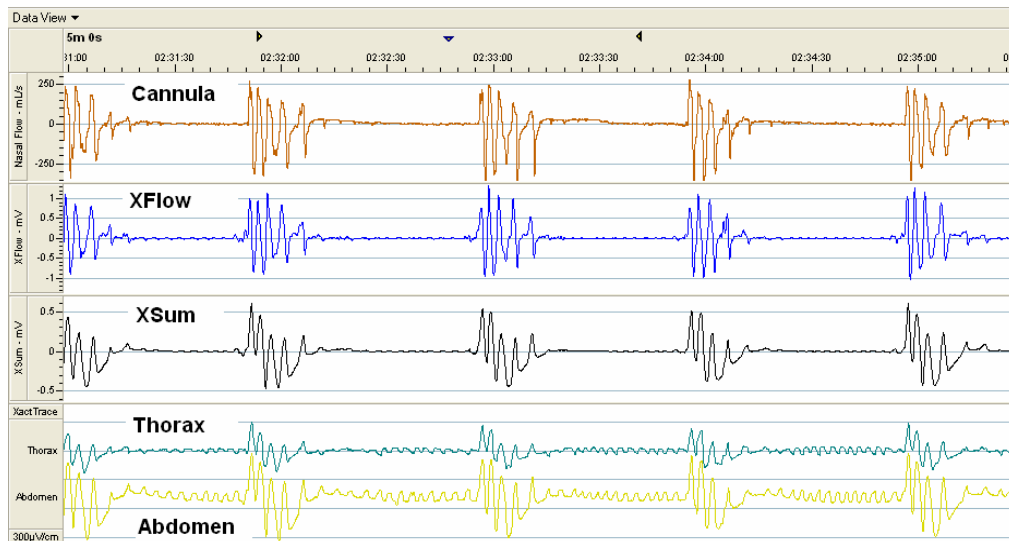
XFlow Technology

XFlow is a semi-quantitative measure of inspiratory and expiratory flow derived from XactTrace measurements of abdominal and thoracic movement. XFlow values are comparable to linearized flow signals generated by nasal pressure transducers and flow signals produced by a pneumotachograph.

XSum Technology

XSum is the summation of XactTrace values of abdominal and thoracic movement signals measured by XactTrace sensors. XSum provides semi-quantitative measures of lung volume with peak to peak measures representing the tidal volume for a single breath.

Example



This screen capture was taken from a recording of a patient with severe sleep apnea. In this example, representing five minutes of recording time, the top channel represents nasal pressure, the second and third channels are XFlow and XSum, and the fourth and fifth channels are thoracic and abdominal movements. Periods of paradoxical breathing are evident throughout this example. XFlow and XSum derived values of flow and lung volume are consistent with XactTrace Respiratory Inductive Plethysmograph values of thoracic and abdominal movements.

Contact support@embla.com for more information.