

Why use Patient Spirometry?

Patient Spirometry is an excellent tool for managing the patient's ventilation during anesthesia and critical care:

Measurement at the airway

- represents real patient values
- is not influenced by ventilator hoses or other breathing system components

Saved reference loops

- enable fast visual detection of changes
- help in adjusting optimal ventilator settings
- help in comparison of actual and previous ventilatory status

Modular flexibility

- can be used with a variety of ventilators
- enables flexible change of modules between patients

Integrated information

- ventilatory and hemodynamic information on a single screen provides a complete picture of the patient status

Comprehensive documentation

- graphical and numerical trends to evaluate of patient's history
- printed loops, trends and snapshots for easy reporting

© 2009 General Electric Company – All rights reserved.
GE and GE Monogram are trademarks of General Electric Company.
GE Healthcare, a division of General Electric Company

General Electric Company reserves the right to make changes in specification and features shown herein, or discontinue the product described at any time without notice or obligation. Contact your GE representative for the most current information

D-lite is a trademark of GE Healthcare Finland Oy.

GE Healthcare Finland Oy, a General Electric company, doing business as GE Healthcare.

CAUTION: U.S. Federal law restricts this device to sale by or on the order of a licensed medical practitioner.

Consult the User's Guide of the monitor for detailed instructions.

Healthcare Re-imagined

GE is dedicated to helping you transform healthcare delivery by driving critical breakthroughs in biology and technology. Our expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, and biopharmaceutical manufacturing technologies is enabling healthcare professionals around the world to discover new ways to predict, diagnose and treat disease earlier. We call this model of care "Early Health." The goal: to help clinicians detect disease earlier, access more information and intervene earlier with more targeted treatments, so they can help their patients live their lives to the fullest. Re-think, Re-discover, Re-invent, Re-imagine.

GE Healthcare
8200 W. Tower Ave.
Milwaukee, WI 53223
USA

www.gehealthcare.com

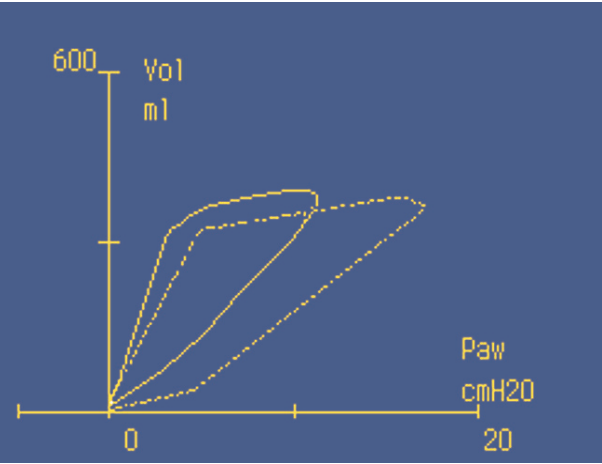
GE Healthcare
Finland Oy
Kuortaneenkatu 2
00510 Helsinki
Finland

GE Healthcare
3/F Building # 1,
GE Technology Park
1 Hua Tuo Road
Shanghai 201203
China



GE Healthcare

Quick Guide

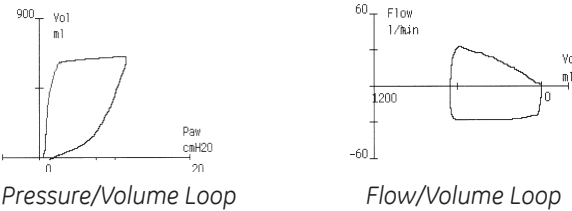


Patient Spirometry

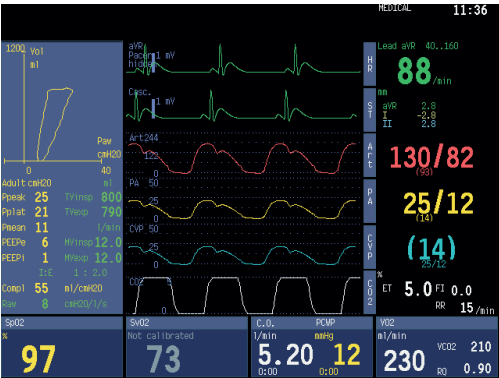
What is Patient Spirometry?

Patient Spirometry measures airway pressures, flow, volumes, compliance and airway resistance breath-by-breath at the patient's airway. The dynamic interrelationships of pressure and volume or flow and volume are displayed as graphical loops.

In addition the inspired and expired gas concentrations are measured (CO₂, O₂ and anesthetic agents).



All parameters are measured through a single, lightweight flow sensor and gas sampler, placed at the patient's airway. The "close to the patient" measurement is sensitive and continuous reflector of patient's ventilatory status, obtained independently of the ventilator used.

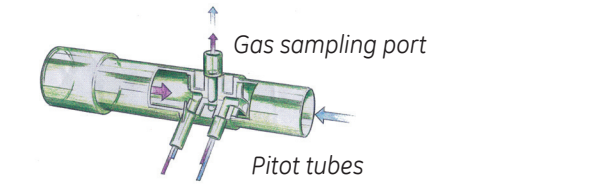


Spirometry split screen enables real-time monitoring of spirometry loops and numerical values, combined with hemodynamic information or real-time waveforms of airway pressure, flow and gases.



How is Patient Spirometry measured?

D-lite™ is an innovative, patented pressure and flow sensor.



Its two pitot tubes measure the pressure difference created by the gas flow. This pressure difference is used together with gas concentration information to calculate the flow. From the flow, both inspiratory and expiratory volumes are calculated.

Total positive end expiratory pressure (PEEP_{tot}) is the sum of externally applied PEEP (extrinsic PEEP, PEEP_e) and intrinsic PEEP (PEEP_i).

PEEP_{tot}= PEEP_i + PEEP_e

Dynamic PEEP_i is detected when the expiratory flow has not stopped before the next inspiration starts. Presence of PEEP_i indicates the air trapping situation in the lung, which may lead both in respiratory and hemodynamic side effects.

Compliance reflects the distensibility of the respiratory system. It is defined as a pressure difference required to expand the lung by a certain volume.

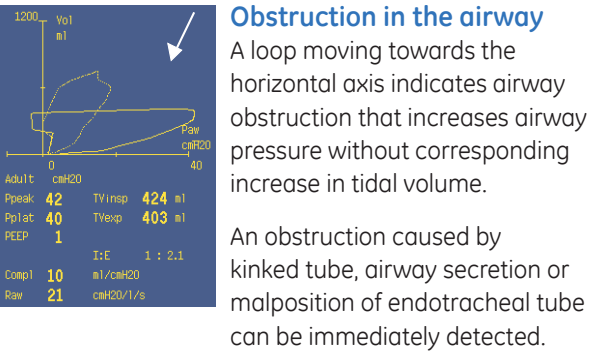
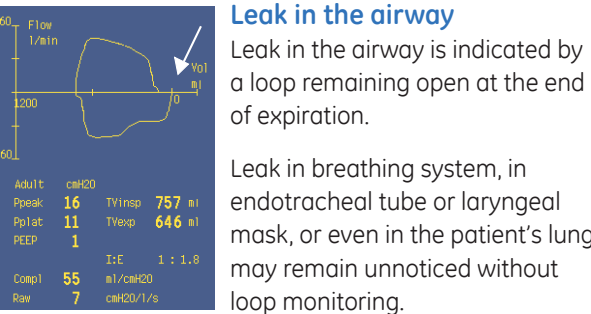
Compl = TVexp/(Pplat-PEEP_{tot})

As continuous dynamic value it provides an easy tool to follow respiratory changes and to adjust ventilator settings.

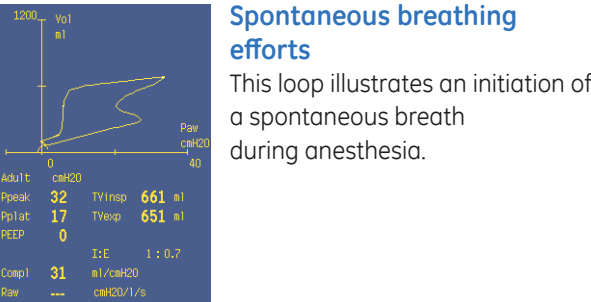
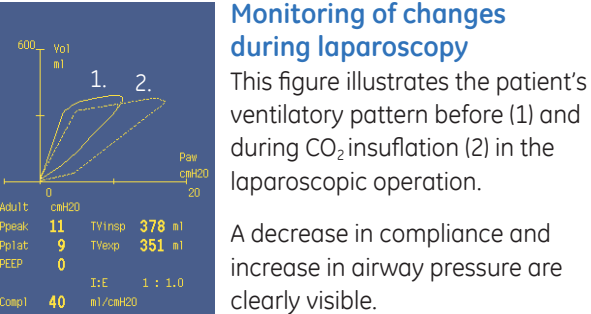
Airway resistance (Raw) is calculated by using an equation, which gives an average system resistance between the lungs and the D-lite sensor over the total breathing cycle.

Paw(t) = Raw * V(t) + V(t) / Compl + PEEP_{tot}

Clinical examples of Patient Spirometry



In Anesthesia



In Critical Care

