



# Vitalograph Spirotrac

## Cardio-Respiratory Diagnostic Software

Vitalograph Spirotrac<sup>®</sup> integrates high quality spirometry, 12-lead ECG, Pulse Oximetry, COPD assessment, blood pressure measurement, challenge testing and more in a flexible, integrated software solution.



**Vitalograph is a world leading provider of outstanding quality cardio-respiratory diagnostic devices, clinical trial services and medical equipment servicing. With a pioneering heritage of excellence spanning half a century Vitalograph continues to make valuable contributions to effective medical care and enhanced quality of life.**

### Power and Sophistication Made Simple

Easy to use Spirotrac software offers wide ranging functionality including:

- Connection of multiple devices to a central network accessible database
- Manual data entry and data export in CSV format
- Secure encrypted data transmission via the internet to Vitalograph hosted central servers for over-reading to provide Quality Assured Spirometry and related services



- Simple icon driven menu and optional biometric logon for users and patients
- Intuitive user interface with workflow orientated presentation in four primary information panels: subjects, test sessions, information and session test panel
- Automatic storage and traceability of all test data and events, including calibration logs and audit trails
- Automated, secure data management designed to comply with the technical requirements of FDA 21 CFR 11, 95/46/EC and HIPAA compliance

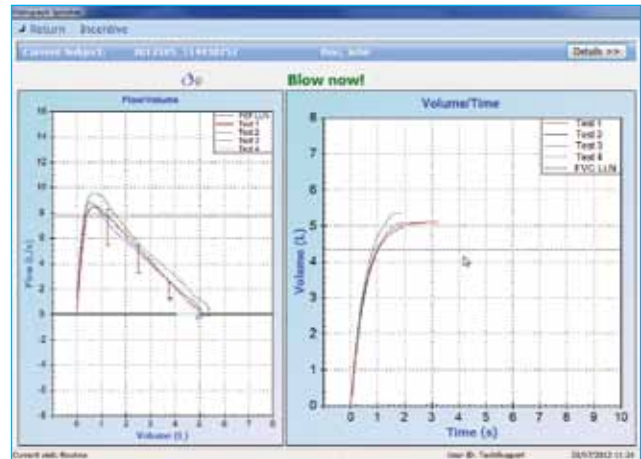
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16/01/2013	09:22	MDE
16/01/2013	12:01	Routine
VC	12:01	
FVC	12:12	
POST	12:19	
SpO2	12:22	
6MWT	12:26	
BP	12:31	
ECG	12:37	
16/01/2013	13:22	MDE



## Spirometry

Spirotrac is compatible with a range of Vitalograph spirometers, each designed to meet your particular spirometry needs. If you prefer a PC-based spirometer the Pneumotrac™ is the one to choose. If you need mobility the Hand Held In2itive™ is ideal. The ALPHA™ Touch is best if you need a touch screen desktop spirometer.

- Scalable volume/time & flow/volume curves using single-breath or multi-breath spirometry
- Optional choice of child incentives with sound effects and transparency so that real-time curves are simultaneously viewable
- Pre-post spirometry comparison for bronchodilator or longer-acting treatments
- Choice of over 50 user selectable parameters
- Automatic and scalable FEV<sub>1</sub> trend chart view as subject is selected prior to testing, designed to reflect the trend of FEV<sub>1</sub> over the lifetime of the subject
- User preference for comparison with a 'normal' population in % predicted or Z-score (SDS)



## Outstanding Spirometry Performance with a Fleisch Pneumotachograph

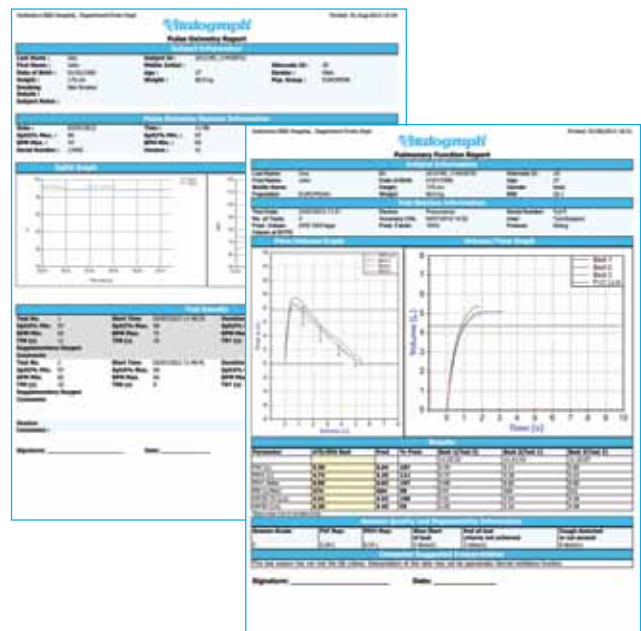
All Vitalograph spirometers feature a Fleisch Pneumotachograph for outstanding performance of accurate, linear and reliable flow / volume measurements.



- No moving parts – essential in adverse environments
- Autoclavable at 137°C
- Robust aluminium, TPX and stainless steel construction

## High Quality, Flexible Reports

- From any network or USB printer





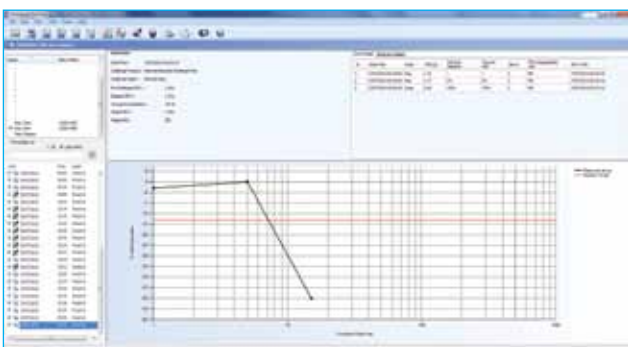
## ECG (EKG)

Spirotrac with ECG offers full 12-lead electrocardiography with very low occurrence of lead artefact. Analysis and interpretation come as standard using the world class University of Glasgow interpretation algorithm which provides detailed diagnostic suggestions and evaluation of results. ECG measurements are captured and transmitted wirelessly for display in real-time and data is automatically saved for recall, reporting or printing. Transmitting ECG traces wirelessly is fast and safe with no leads to trip over or create artefacts from movement or electrical sources. The built-in display provides information on electrode contact problems, heart rate, battery status, communication status and digital pacemaker detection. Spirotrac with ECG features:



- ⊗ Operator controlled selection of a 10-s sample trace, but can capture and store several minutes of 12-lead ECG recording
- ⊗ Visual electrode contact indication to assist operator
- ⊗ Wireless data transmission via Bluetooth® (range: approx. 10m)
- ⊗ High quality multi-channel and 12-lead overview for viewing and printing
- ⊗ Print configurable 1 or 2 page reports
- ⊗ View traces as 1 x 12; 2 x 6 or 3 x 4 plus rhythm strip
- ⊗ Calculation of the heart rate with acoustic and visual signal
- ⊗ Full range of parameters are available (e.g. P duration, PQ interval, QRS period)

- ⊗ Automatic pacemaker detection
- ⊗ Rhythm analysis



## Methacholine and Mannitol Bronchial Challenge (ATS and Mannitol)

The causes of asthma and allergy can be difficult to diagnose, but bronchial provocation with specific sensitisers, methacholine or mannitol is of value to identify the extent and cause of bronchial hyper-responsiveness.



### Pulse Oximetry

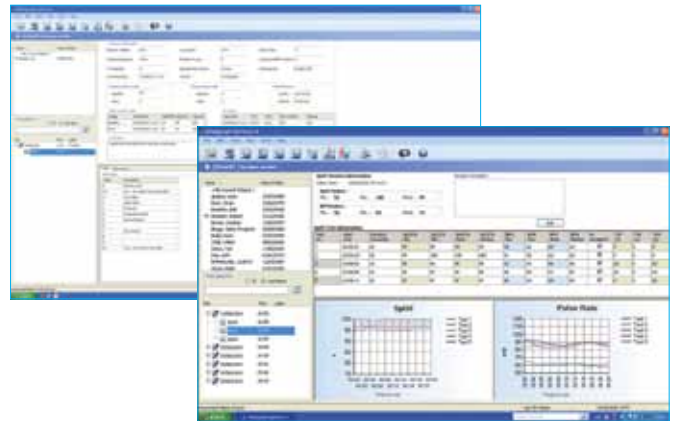
The Spirotrac® Pulse Oximetry Software feature allows you to plug an SpO2 sensor directly in to the USB port on your COMPACT Expert to deliver accurate and high quality oximetry alongside spirometry.

This calculates, trends and reports all primary parameters including minimum, maximum and median SpO2/pulse rate. Capable of recording quick assessments or longer term recordings and up to four Tx values can be selected by the user.



### COPD Assessment

- ❖ Spirometry and pulse oximetry data is automatically or manually integrated using the ATS/ERS 6-minute walk test protocol
- ❖ 6-minute walk test Wizard runs in 10 logical stages
- ❖ The BODE\* Index (\*Body Mass Index, Obstructive Index, Dyspnoea Score, Exercise Tolerance) predicts COPD mortality based on FEV<sub>1</sub>, 6MWT, BMI, MMRC and BORG Scale



### Blood Pressure

Subject BP data can be transferred to the database from a Bluetooth Blood Pressure device or entered manually.



### Weighing Scale

Subject weight data can be transferred to the database from a Bluetooth Medical Weighing Scales or entered manually.



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# Technical Specification:

## Spirotrac

**Product:** Vitalograph Spirotrac Software

**Model Number:** 7000

**Safety Standards:**

EN ISO 60601-1: 2005 -1 -2 -4, IEC 60601-2-25

**Medical Safety Standard:** Medical Devices Directive 93/42/EEC1993 (as amended)

**Designed & Manufactured Under:** ISO 13485:2003, FDA 21CFR820, CMDR & JPAL

## System Requirements:

**Processor Speed:** 1.73GHz or faster

**RAM:** 1Gb or greater

**Disk Space:** 500Mb of free disk space plus 1Gb for .NET Framework V3.5 and 1Gb for SQL Server (if not already installed)

## Operating System:

Microsoft® Windows™ Vista, Windows 8, Windows XP Pro SP2 or Windows 7

## Monitor:

Min. screen resolution 1024 x 768 pixels

**Other:** Mouse; USB port

## 12 Lead ECG

**ECG BT12:** 12-channel, 3 leads acc. to Einthoven, 3 acc. to Goldberger, 6 Wilson leads

**Electrodes:** Standard ECG electrodes

**Dimensions:** 61mm x 106mm x 23mm

**Weight:** Incl. cable and batteries 210g (without batteries 154g)

**Operating environment:**

0°C – 50°C, < 95 % RH

**Storage environment:**

-20°C – 70°C, < 95 % RH

**Power Supply:**

2 x AA batteries (1.5 V) or rechargeable batteries (1.2 V)

**Data Transmission:** Wireless, online with wireless standard Bluetooth 1.2

**Protection against penetration of water:** IPX3

**Electrodes:** Standard ECG electrodes

## Pneumotrac

**Product:** Pneumotrac

**Model No:** 6800

**Size:** 170mm x 163mm x 45mm

**Weight:** 345g

**Operating Temperature Range:** ATS/ERS limits: 17-37°C Design Limits: 10-40°C

**Power Supply:** From USB 2 port 9V battery for hygiene fan

**Flow Detection Principle:** Fleisch type pneumotachograph

**Volume Detection:** Flow integration sampling @ 100Hz

**Accuracy when operated in operating temperature range conditions:** Volumes: Better than ±3% (Max displayed volume 10 L) Flows: Better than ±10% (Max ±16 L/s / Min ± 0.02 L/s)

**Max Test Duration:** 45 seconds

**Environmental Data:** Selectable temperature (built in sensor), barometric pressure, altitude and humidity

**Parameters Displayed:** User selectable from: VC, IVC, IC, VT (TV), TLC, RV, IRV, ERV, FRC, FVC, FIVC, FEV<sub>1</sub>, FEV<sub>3</sub>, FEV<sub>6</sub>, FVC, FEV<sub>1</sub>/VC, FEV<sub>1</sub>/FVC, FEV<sub>3</sub>/VC, FEV<sub>3</sub>/FVC, FEV<sub>1</sub>/FEV<sub>6</sub>, FEF<sub>75</sub>, FEF<sub>50</sub>, FEF<sub>25</sub>, FEF<sub>25-75</sub>, FEF<sub>25-75</sub>/FVC, FIV<sub>1</sub>, PIF, FIV<sub>1</sub>/FIVC, FIF<sub>25</sub>, FIF<sub>50</sub>, FIF<sub>75</sub>, FEF<sub>50</sub>/FIF<sub>50</sub>, FET, MVVind, FEV<sub>1</sub> Ratio, FEV<sub>0.5</sub>, PEF L/min, PEF L/s, FEF<sub>0.2-1.2</sub>, FEF<sub>75-85</sub>%, FEF<sub>25</sub>%, FEF<sub>50</sub>%, FEF<sub>75</sub>%, FMFT, FIF<sub>25</sub>%, FIF<sub>50</sub>%, FIF<sub>75</sub>%, PIF, FEV<sub>0.75</sub>, Lung Age and more

**Test Types:** Single breath tests, flow/volume loops, multi-breath testing, tidal breathing and combined VC/FVC type test methods supported

**Predicted Values Selectable:** ERS/ECCS, NHANES, Polgar, Pereira, Berglund, Forsche, Gutierrez, Hedenström, Taiwan, Knudson, Crapo, Hsu, KNLW, Viljanen, SEPAR, Gulsvik, SBPT, Tamura, Ip, Quanjer, Wang, Dockery and more

**Performance Standards:** ISO 26782:2009, ISO 23747:2007, ATS/ERS 2005

## Ordering Info:

67800 6600 Vitalograph COMPACT with Fleisch Pneumotachograph includes Software modules for Spirometry, ECG, SpO<sub>2</sub>, BP, Weight, Bronchial Challenge Testing, 6MWT

67900 6600 COMPACT with ECG

### COMPACT Compatible Devices:

70400 Pulse Oximetry Finger Probe USB

70401 Biometric Scanner USB

70403 Blood Pressure Monitor Bluetooth

70404 Medical Weighing Scales Bluetooth

### Other Vitalograph medical devices that communicate with COMPACT:

79400 2120 Hand Held In2itive™ Spirometer

65500 6000 ALPHA Touch™

40400 4000 Respiratory Monitor asma-1™ USB

### Consumables and Accessories

41301 Disposable ECG Electrodes (30)

28350 2820 BVF™ Bacterial/Viral Filters (50)

20242 2024 SafeTway® mouthpieces (200)

20980 2024 Mini SafeTway mouthpieces (50)

20303 2030 Noseclip disposable (200)

36020 2040 Precision Syringe 3-L

41302 ECG Simulator

 Vitalograph®

Your respiratory partner

[www.vitalograph.co.uk](http://www.vitalograph.co.uk)

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