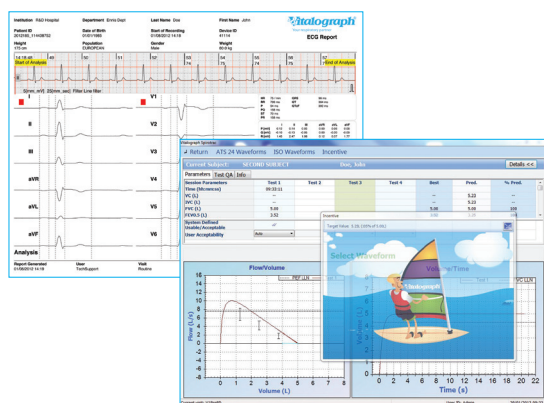# Vitalograph Spirotrac
Cardio-Respiratory Diagnostic Software

Vitalograph Spirotrac® 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

- 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

- 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

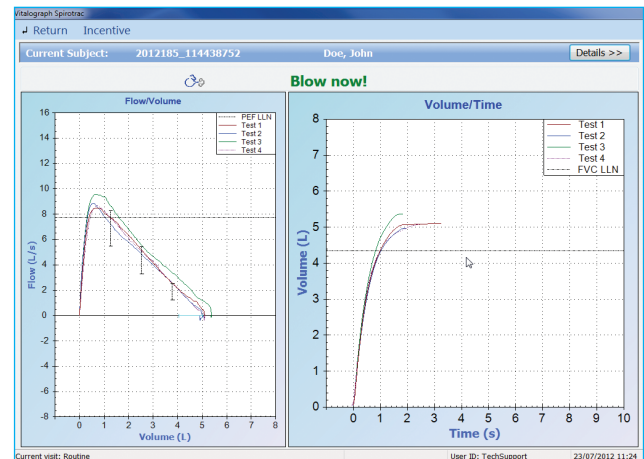| Visit	Time	Label
16/01/2013	09:22	MDE
16/01/2013	12:01	Routine
VC	12:01	
FVC	12:12	
POST	12:19	
SpO2	12:22	
6MWT	12:26	
BP	12:31	
ECG	12:37	
16/01/2013	13:22	MDE

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_1 trend chart view as subject is selected prior to testing, designed to reflect the trend of FEV_1 over the lifetime of the subject
- User preference for comparison with a 'normal' population in % predicted or Z-score (SDS)

Pneumotrac *In2itive* *ALPHA Touch*

PC based, mobile and desktop spirometers

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

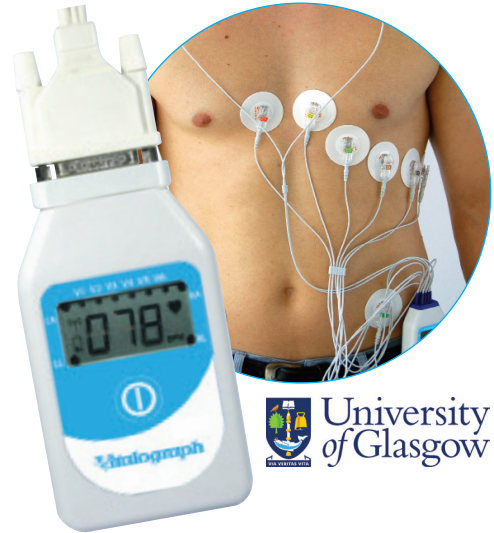### High Quality, Flexible Reports

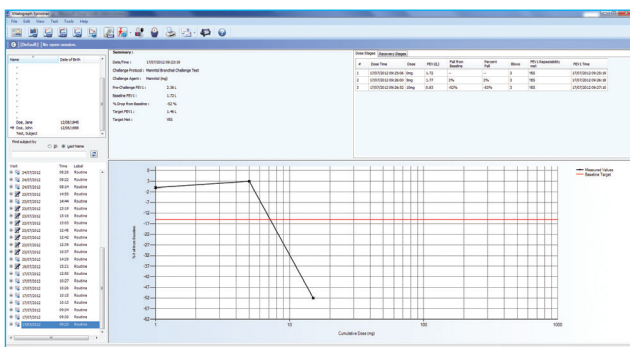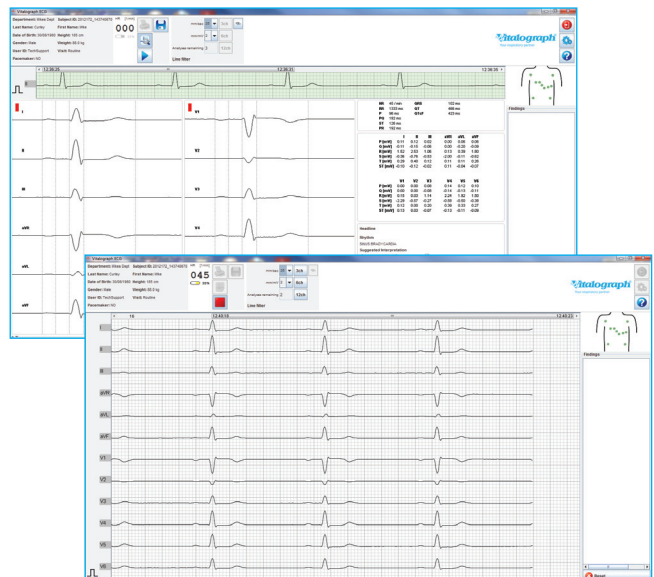- From any network or USB printer

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:
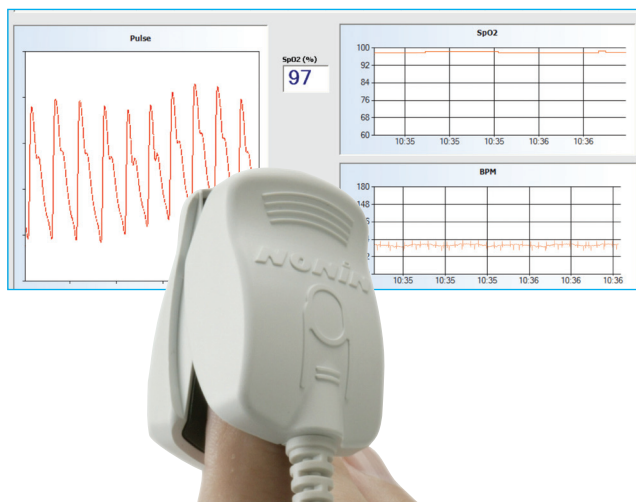
- Operator controlled selection of a 10-s sample trace, but can capture and store several minutes of 12-lead ECG recording
- Visual electrode contact indication to assist operator
- Wireless data transmission via Bluetooth® (range: approx. 10m)
- High quality multi-channel and 12-lead overview for viewing 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.
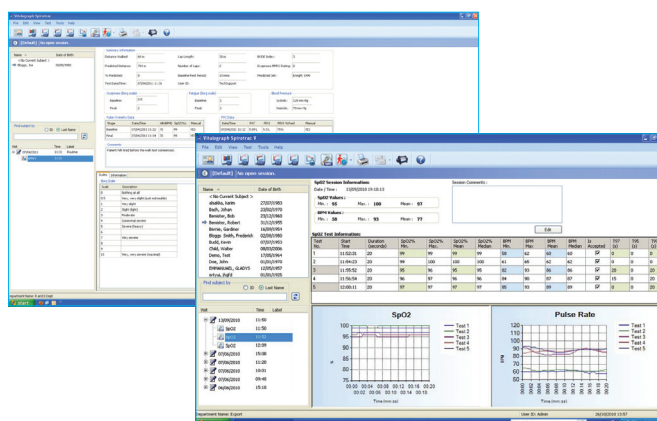
Pulse Oximetry

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_1, 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.

*Vitalograph®
Your respiratory partner

www.vitalograph.co.uk

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PRINT REF: 14508_3 Web

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_1, FEV_3, FEV_6, FVC, FEV_1/VC, FEV_1/FVC, FEV_3/VC, FEV_3/FVC, FEV_1/FEV_6, FEF_{75}, FEF_{50}, FEF_{25}, FEF_{25^-75}, FEF_{25^-75}/FVC, FIV_1, PIF, $FIV_1/FIVC$, FIF_{25}, FIF_{50}, FIF_{75}, FEF_{50}/FIF_{50}, FET, MVVind, FEV_1 Ratio, $FEV_{0.5}$, PEF L/min, PEF L/s, $FEF_{0.2^-1.2}$, $FEF_{75^-85}\%$, $FEF_{25}\%$, $FEF_{50}\%$, $FEF_{75}\%$, FMFT, $FIF_{25}\%$, $FIF_{50}\%$, $FIF_{75}\%$, PIF, $FEV_{0.75}$, 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:

70600 7000 Spirotrac

77000 6800 Pneumotrac with Spirotrac

77550 6800 Pneumotrac with Spirotrac & ECG

70201 7000 Spirotrac Networking Licence

NOTE: Spirotrac Test Station Software includes software for Spirometry, 12 Lead ECG, Pulse Oximetry, 6MWT, NIBP, Weight, and Bronchial Challenge Testing (Mannitol and Methacholine)

Compatible Devices & Hardware:

79400 2120 Hand Held In2itive with V/R Software

65600 6000 ALPHA Touch with Spirotrac software

40400 4000 Respiratory Monitor asma-1™ USB

70400 Pulse Oximetry Finger Probe USB

70401 Biometric Scanner USB

70402 Blood Pressure Monitor USB

70404 Medical Weighing Scales Bluetooth

Consumables and Accessories:

41301 ECG Electrodes disposable (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

42084 Flow Conditioning Meshes (10)

76050 Filter Pads & Tweezers (50)

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