

ZAN[®] 680 Cardiopulmonary Exercise

with 12-lead ECG



Redefining Accuracy Beyond the Standard

ZAN[®] 680 Cardiopulmonary Exercise with 12-lead ECG (CPET) delivers more than reliable test results. By redefining accuracy in every step of the testing process, ZAN CPET ensures the diagnostic confidence you need, from routine diagnosis to performance monitoring of elite athletes.

Redefining Accuracy — Diagnostic Confidence

ZAN CPET is the first and only system to incorporate the largest predicted equation set ever created for cardiopulmonary exercise testing. This unparalleled predicted compilation is ideal for every level of exercise intensity and optimal for sub-maximal and peak performance testing.

Redefining Accuracy — Improving Outcomes

ZAN CPET utilizes proprietary VIP[™] (Variable Impedance Pneumotachometer) sensor technology. VIP dynamically alters its characteristics in real-time during testing, maintaining optimum performance by actually lowering resistance as ventilation increases; making it easier for your patient to reach desired levels of exercise intensity for improved diagnosis, on evaluation of fitness.

Redefining Accuracy — Proven Technology

- **VIP Flow Technology.** VIP the perfect measuring device for exercise, remaining insensitive to moisture effects throughout the entire testing process.
- **O₂/CO₂ Gas Analysers.** ZAN CPET uses amperometric solid state electrolyte sensors with ultra-fast response times guaranteeing precise gas exchange measurements and extended life.
- **Comprehensive 12 Lead ECG.** Seamless integration of CPET gas exchange, 12-lead stress ECG, spirometry and resistance delivers definitive measurements of Respiratory, Cardiac, Fitness performance & limitations to exercise.
- **ZAN-Tech Software** simplifies testing processes, shortens exam times, and optimizes interpretation by offering:
 - **Interactive Interpretation.** Customisable graphic displays enhance workflow and enable the personalization of interpretations based on Wasserman plots, providing the standard in CPET diagnostic tools.
 - **Flexible Protocol Programming.** Permits real-time protocol adjustments during active testing, ensuring optimal test results and quality reports.
 - **Sub-Maximal Testing.** World's only implementation of the Inbar predicted values enables assessment of sub-maximal efforts both in real time and post-testing; providing confidence that all patients receive an accurate diagnosis.
 - **Networking/Connectivity.** ZAN-Tech simplifies workflow, is easily networked, and includes HL7 connectivity to most EMR/HIS systems.

Redefining Accuracy. Beyond Expectations.

While ZAN CPET offers the most accurate cardiopulmonary exercise testing solution and the lowest total cost of operation, nSpire Health offerings also include comprehensive clinical, technical, and educational services designed to optimize and protect your investment.

nSpire Health's Equipment Maintenance and Training Solutions offer unprecedented flexibility to help you optimize your assets availability throughout the instruments lifecycle. Comprehensive Continuing Education (including accredited CEU), delivered by nSpire Health experts help you achieve the most clinical efficiency and productivity out of your PFT lab. Worldwide Customer Services include clinical help desk, on-site field service, factory repair, web-based training, and a complete line of financial service solutions to meet your needs.



Distributed by:

References:

- Inbar O, Oren A, Scheinowitz M, Rotstein A, Dlin R, Casaburi R. Normal cardiopulmonary responses during incremental exercise in 20- to 70-yr-old men. *Med Sci Sports Exerc* 1994;26:538-546.
- American Thoracic Society/American College of Chest Physicians ATS/ACCP Statement on Cardiopulmonary Exercise Testing Joint Statement of the American Thoracic Society (ATS) and the American College of Chest Physicians (ACCP) was adopted by the ATS Board of Directors, March 1, 2002 and by the ACCP Health Science Policy Committee, November 1, 2001
- Wasserman K, Hansen J, Sue D, Stringer W and Whipp B. Principles of exercise testing and interpretation including Pathophysiology and clinical applications Fourth Edition.



©Copyright nSpire Health 2007. Due to continual innovations, nSpire Health reserves the right to change specifications without notice. ZAN is a registered trademark of nSpire Health.

Technical Specifications

Measurement Module

Mechanical Data

Weight: 2 kg (4.4 lbs)

Dimensions: (W, D, H) 300 x 280 x 85mm³
(11.81 x 11.02 x 3.35 inches)

Material: Plastic frame

Colour: Light grey

Classification According to MDD: Ila 93/42/Council of the EC 14.06.93, Appendix IX

Electrical Data

Safety: Class 2

Type of Application: Part BF DIN EN 60601-1

Power Supply: 12 V DC max. 3 A

Current Consumption @ Warm Up Time: 0.3A (230V~)

Warm Up Time: 20 min.

Current Consumption @ Operation: 0.2A (230V~)

PC-Interface: USB V1.1

IP- Protection Type: IPX0

Flow

Flow Sensor: ZAN VIP Flow Sensor

Range: ±16 l/s

Flow Resolution: <1 ml/s

Max. Linearity Error: <2.5%

Resistance: <0.05kPa/l/s <14 l/s

Effective Dead Space: <40 ml

Inner Diameter: 24mm

Weight: 65g (2 oz.)

Temperature Sensitivity: 0.5%/°C (without software-compensation)

Humidity Sensitivity: <2% @ 0-99% Humidity

Pressure Transducer for Flow Semiconductor (differential)

Range: ± 0.25 kPa

Accuracy: 0.05% FS (Full Scale)

Resolution: 16Bit

Volume

Volume: 0-20L

Volume Resolution: < 5ml

Accuracy: < 2.5%

Backpressure: < 0.7 kPa at 14l/s

Gas Analyser O₂

Principle Amperometric solid state electrolyte sensor, non consuming

Range: 5% - 50 % O₂, optional 0 - 100%

Resolution: 0.01 % O₂

Linearity: 0.05 % O₂

Accuracy: 0.1 % O₂

Zero-Drift / Stability: 0.1 % O₂ / 10 h

Warm up Time: Approx 20 min.

Rise Time: T₁₀₋₉₀ <90 ms

Humidity: Insensitive

Working Temperature: 5 to 55°C

O₂ Uptake: 0-8 l/min

Accuracy: O₂ uptake 3%

Gas Analyser CO₂

Principle Infrared Spectroscopy

Range: 0 - 13 % CO₂

Resolution: (0-10%) 0.01 % CO₂

Linearity: (0-10%) 0.1 % CO₂

Accuracy: (0-10%) 0.1 Vol%

Repeatability: < 0.02 % CO₂

Zero-Drift / Stability: (0-10%) 0.1 % CO₂ / 24 h

Warm up Time: 15 min.

Rise Time: T₁₀₋₉₀ <90 ms

Humidity: 0-90%, non condensing

Working Temperature: 5 to 55°C

CO₂ Delivery: 0-8 l/min

Accuracy CO₂ Delivery: 3%

Environmental Conditions

Operating Conditions

Temperature: 5 to 55°C

Relative Humidity: 20% - 90% @ +20°C (non condensing)

Up to 70% @ +40°C (non condensing)

Atmospheric Pressure: Between 900 and 1060 hPa

Storage and Transport Conditions

Temperature: 0°C to +40°C

Humidity: 10% bis 90% (non condensing)

Explosive Area: The device must not be used in explosive or combustible environment

Dripping / Splashwater: The device must not be exposed to dripping / splash-water (IPX0)

The ZAN Quality Management System is certified according to DIN EN ISO 9001:2000 and DIN EN 13485:2003

Contact Information

nSpire Health Ltd.

Unit 10 Harforde Court

John Tate Road

Hertford SG13 7NW, UK

Tel: + 44 (0) 1992 526300

Fax: +44 (0) 1992 526320

Email: info@nspirehealth.com

www.nspirehealth.com