Accurate and easy to use hand-held device for flexible spirometry screening!

- Full spirometry testing (FVC, SVC, MVV, Bronchial challenge test)
- Accurate bidirectional turbine flowmeter reliable in any conditions
- USB connection (PC and external Printer)
- Internal memory of up to 600 tests/patients
- Integrated Digital Oximeter (optional) for HR and SpO\textsubscript{2} monitoring
- Advanced software for data management, real time testing and interpretation directly on PC
Spiropalm is the NEW hand-held device designed for flexible spirometry screening. Tests can be performed easily and accurately wherever it is needed. Results are monitored on the bright and clear black and white display and printed by linking Spiropalm directly to an external printer or to a PC.

Spiropalm is a very compact portable spirometer (dims. 18x7.5x3 cm) and it comes with a bidirectional turbine flowmeter (that requires the use of antibacterial filters). Optionally, Spiropalm can be implemented with an integrated Nonin pulseoximeter for measuring SpO₂ and HR parameters.

The device has been designed in a simple operating mode through a navigation tool similar to cellular phones.

Applications

► Small Clinic, Family Practice
► General Practitioner, Primary care
► Mobile Solutions
► Occupational Health
► Preventive Medicine
► Sports Doctor

Accurate Measurements

COSMED flowmeters are extremely accurate and comply with the most stringent requirements for precision fixed by ATS and ERS.

► Full Spirometry (FVC, SVC, MVV, pre/post)
► Bronchial challenge test (Pre-Post)
► SpO₂ (option)
► Six-Minutes Walk Test (6MWT)
► Normal values: ERS, NHANES III, Crapo 1981, Knudson 1983, ITS, Multicentrico Barcelona, LAM, Gutierrez, Pneumobil, Zapletal, Thai 2000, Pereira, Austria (Forche)

High connectivity!

Spiropalm offers 3 different interfacing options:

► the USB-B for direct printing with an external inkjet or laser printer (PCL compatible).
► the USB-A for PC connection
► port for connection with pulse oximeter for SpO₂ monitoring

Automatic Diagnosis

The automatic interpretation of test results as per the latest interpretation criteria fixed by ATS and ERS, is automatically suggested by the software at the end of the test. User however can manually modify the diagnosis, customize the diagnosis database and add notes. Spiropalm is currently the unique spirometer that incorporates the diagnosis for COPD after a bronchial dilator test.
Spiropalm comes with Omnia, the new software generation from COSMED. Omnia combines power and simplicity in an innovative user interface.

- Innovative user interface, touch screen, easy and self-explanatory
- Compatible with Win 8 PRO (32/64), Win 7 (32/64), Win Vista (32/64)
- Full compliance with “2005 ATS/ERS consensus” (Interpretation, QC, etc.)
- GOLD COPD Interpretation on FVC Post BD
- Includes latest Global Lung Initiative (GLI) predicted (Z-score etc.)
- ATS, Metacholine-dose, Mannitol and user defined Broncho-Provocation protocols
- Graphical data presentation both at screen and on printouts
- Innovative pediatric incentivation with selectable effort grade
- New calibration procedures (calibration and linearity Check) according to latest Occupational Health standard
- GDT data interface protocol included
- Multi-device management (single license for multiple product)
- HIPAA compliance
- Running on SQL database (both Express or Enterprise)

Digital turbine flowmeter: It does not require frequent calibration. Extremely accurate and reliable in any conditions. It can be used with antibacterial filters (recommended) or cardboard mouthpieces.
## Technical Specification

### Products Features

<table>
<thead>
<tr>
<th>Flowmeter</th>
<th>Digital Turbine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Bi-directional</td>
</tr>
<tr>
<td>Flow Range</td>
<td>0-16 l/s</td>
</tr>
<tr>
<td>Volume range</td>
<td>12 litres</td>
</tr>
<tr>
<td>Accuracy of reading</td>
<td>±2% or 20 ml/s</td>
</tr>
<tr>
<td>Resistance</td>
<td>&lt;0.8 cm H2O/l/s @ 14 l/s</td>
</tr>
<tr>
<td>Temperature sensor</td>
<td>0-50°C</td>
</tr>
</tbody>
</table>

### Flowmeter Features

**Flowmeter**
- Digital Turbine
- Bi-directional
- Flow Range: 0-16 l/s
- Volume range: 12 litres
- Accuracy of reading: ±2% or 20 ml/s
- Resistance: <0.8 cm H2O/l/s @ 14 l/s
- Temperature sensor: 0-50°C

### Measured parameter

- FVC • IVC • VC • MVV • VT • FEV1 • FEV6 • FEV6/FVC • PEF • PIF • FEV1/FVC • FEF 25-75 • FEV1/VC% • MEF25% • MEF50% • MEF75% • FET 100%
- Lung Age • ERV • IRV • VE • VT • I•t•o•t• VT • I•t•t• VT • Best FVC • Best FEV1 • IC • SpO2 • HR

### Predicted values (partial listing)

- 2012 Global Lung Initiative (GIL), ERS 1993 (ECCS 1983), NHANES III, Knudson 83, ECCS 1971, ITS, Zapletal, LAM, Pneumobil, Gutierrez (Chile), Multicéntrico Barcelona, Thau 2000, Austria (Forché), Crapo 1981 user defined predicted calculations.

### Automatic Interpretation

- ATS/ERS 2005 (Spirometry), GOLD COPD, ATS/ERS 2005 (Obstruction Reversibility based on FVC Post BD)

### Hardware

<table>
<thead>
<tr>
<th>Dimension (mm/in)</th>
<th>185x86x31/7¼ x 3 ¼ x 1 ¼ in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (g/oz)</td>
<td>390 /13½</td>
</tr>
<tr>
<td>Display</td>
<td>LCD B/W, 320 x 240 pixel (amber backlit)</td>
</tr>
</tbody>
</table>

### Standard Packaging Includes

- PC software and user manual, Flowmeter, AC/DC adapter (110-240V), USB communication cable, Pediatric mouthpiece adapter, Mouthpieces and nose clips, Anti-Bacterial filters, CD-Rom.

### Available languages

- Firmware: English, Italian, French, German, Spanish, Portuguese, Turkish, Chinese (Mandarin), Korean
- Software (OMNIA): English, Italian, French, German, Spanish, Dutch, Russian, Chinese, Portuguese

### PC configuration required

- OS compatibility: Vista (32/64), Windows 7 (32/64), Windows 8 (32/64)
- Processor speed: 1.4 GHz or faster
- RAM: 1 GB or greater
- Disk space: 500 MB of free disk space plus 100 MB for .NET framework plus 512 MB for SQL Server 2008 R2 SP1 Express
- Monitor: Min. screen resolution 1280 x 800 pixels
- Direct USB printing: Only with compatible HP PCL printers with an USB port for data transmission

### Electrical requirements

- Internal batteries: Rechargeable Li-Ion 1800mAh
- Battery Charger: Input 100-240Vac 200mA, Output 12Vdc 700mA

### Safety & Quality Standards

- Equipment complies with MDD (93/42 EEC); EN 60601-1 (safety) / EN 60601-1-2 (EMC).
- COSMED is an organisation whose quality management system is certified by CERMET according to UNI EN ISO 9001:2008 and UNI EN ISO 13484:2004

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**Possibility to save PDF reports directly in a configured USB stick**