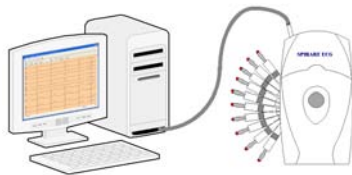


# SPIRARE®

## Network spirometry and ECG



**Spirometry workstation** – Perform spirometric tests, review and compare previous tests.



**ECG workstation** – Perform ECG recordings, review and compare previous recordings.



**Portable unit** – Perform ambulatory spirometric tests. Synchronise data with main database.



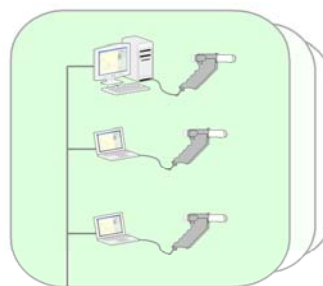
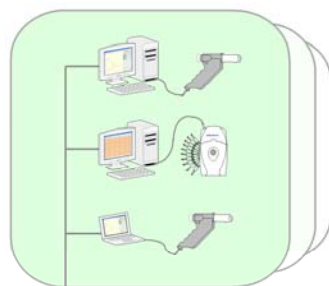
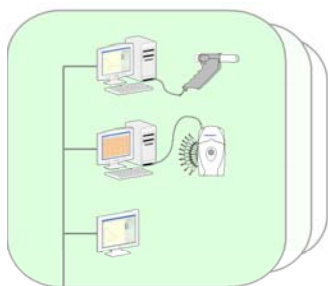
**Terminal client** – Review, compare and annotate stored spirometry and/or ECG tests. View trend graphs and perform statistical analysis (optional module).

## Example network

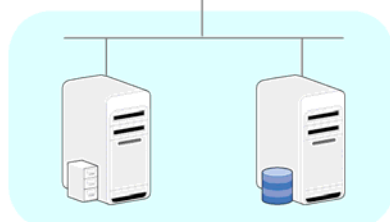
Primary health care units

Hospitals / Outpatient clinics

Occupational health care units



File server



Database server

IT department / Application service provider

## Spirare 3 software

- Share spirometric tests and ECG recordings in network
- Spirometry and ECG data in one central database
- Integration with multiple EPJ systems
- Ambulatory use with portable units
- Maintenance-free USB units without external power supply
- USB ultrasonic spirometer and high resolution ECG recorder
- Advanced quality control systems
- Statistical analysis (optional module)
- Client/server technology
- Modest bandwidth requirements
- Supports Terminal Server
- No need for local database installation
- Email encrypted data for patient referrals

# Technical specification

## Spirare software

|                         |   |
|-------------------------|---|
| Use                     | Stand-alone or integrated with patient journal system / electronic medical record (EPJ/HIS/EMR)   |
| Spirometric tests       | Forced/slow expiratory/inspiratory vital capacity, reversibility tests (post bronchodilatation), challenge tests (exercise, cold/dry air, pharmaceutical agents), tidal volumes. Child incentive. Maximum voluntary ventilation. More than 60 parameters available. |
| Ergometric tests        | VO <sub>2</sub> max   |
| ECG tests               | Rest ECG and rhythm analysis. More than 25 parameters available.  |
| System requirements     | Operating system: Windows 2000/XP/2003/Vista<br>Processor: Pentium III 500MHz or faster<br>USB support<br>Monitor resolution: 800 × 600 or better<br>Free disk space: 50MB minimum (depending on no. of tests)  |
| Database options        | Standard database (1-15 users on LAN) or Client/Server database (15+ users, WAN or terminal server installations)   |
| Supported networks      | Standard database: Single workstation, LAN, Linux server with Samba<br>Client/Server database: LAN, WAN, NT Terminal Server / Citrix MetaFrame  |
| Supported spirometers   | Spirare SPS310 ultrasonic sensor, <i>ndd</i> EasyOne and some models of MicroMedical MicroLoop / MicroLab / MicroPlus / MicroDL   |
| Supported ergometers    | Monark Ergomedic 839E   |
| Supported ECG recorders | Spirare ECG recorder, MeditSense 100B   |

## Spirare SPS310 spirometry sensor

|  |  |
|--|--|
| Principle                                  | PC based flow sensor with bi-directional ultrasound transit time analysis  |
| Sampling rate                              | 200 Hz   |
| Connector                                  | USB 1, type A  |
| Dimensions                                 | 17 × 8 × 13 cm (H × W × D)   |
| Weight (including cable and USB connector) | 149 g  |
| Accuracy                                   | Volume: ± 2 % or 0.050 L<br>Flow: ± 2 % or 0.020 L/s<br>PEF: ± 5 % or 0.200 L/s<br>MVV: ± 5 % or 5 L/min                             |
| Resolution                                 | Volume: ≥ 1 ml/s<br>Flow: 4 ml/s   |
| Range                                      | Volume: ± 12 L<br>Flow: ± 16 L/s   |
| Resistance                                 | Less than 0.3 cm H <sub>2</sub> O/L/sec  |
| Mouthpiece                                 | Disposable Spirette breathing tube   |
| Storage range:                             | Temperature: -40 to +70 °C<br>Relative humidity: 10 % to 95 %<br>Ambient pressure: 500 to 1060 hPa                                   |
| Operating range:                           | Temperature: 0 to 50 °C<br>Relative humidity: 0 % to 95 %<br>Ambient pressure: 500 to 1060 hPa                                       |
| Device compliance:                         | ATS/ERS Standards<br>CE-0470 certificate; CSA certificate, NEMKO certificate<br>Certified according to IEC 60601. Type BF equipment. |
|  | Equipment not suitable for use in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide.          |

## Spirare SPE100 ECG recorder

|                     |  |
|---------------------|--|
| No. of leads        | 12 (standard or Cabrera) with broken lead detection  |
| Sampling rate       | 2000 Hz  |
| A/D Resolution      | 16 bits at 200 Hz  |
| Dynamic input range | 32 mV peak to peak   |
| Frequency response  | 0.05 – 500 Hz (at 2000 Hz)   |
| Input impedance     | > 10 M Ohm   |
| Filters             | Bandstop: 50 / 60 Hz<br>High pass: 0.05 Hz<br>Low pass: 40 / 100 / 160 Hz  |
| ECG cable           | 12 lead cable with banana, snap or clip connectors   |
| Connector           | USB 1, type A  |
| Power supply        | From host PC   |
| Dimensions          | 180 x 95 x 35 mm   |
| Weight              | 300 g  |
| Device compliance   | CE-0470 certificate, Class IIA equipment<br>NEMKO certificate<br>EN 60601-1, EN 60601-1-1 and EN 60601-2-27<br>Level CF defibrillator proof<br>Water resistant according to IPX4 (for outdoor use) |

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