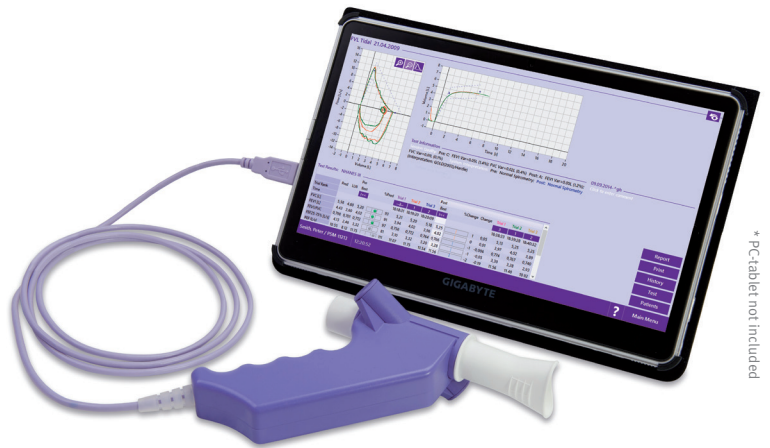


Easy on-PC

Modern PC-based spirometer offering maximum functionality and value



* PC-tablet not included

Spirometry (FVC, FVL, SVC, MVV, Provocation)

The proven ultrasound technology
n d d TrueFlow

**no calibration, no warm-up
time, no moving parts**

Real time curves and pediatric incentives

Intuitive PC-based solution

Automated user guidance throughout maneuvers based on current ATS/ERS standards

Reproducible results ensure comparability in multicenter studies

Immediate test quality feedback in accordance with ATS/ERS criteria

Export of pdf files and raw data

Flexible HL7 and XML interface for easy EMR integration

Absolute hygienic solution with Spirette consumable eliminates the risk of cross-contamination

Customizable reports

Powerful data-management



The original ultrasonic flow measurement is highly accurate in all flow ranges, independent of gas composition, pressure, temperature and humidity and does not require calibration during its life-time. The sensor is never in direct contact with the patient's flow. n d d TrueFlow is a hygienic and resistance-free solution.

Standards & Recommendations

Quality, Medical Devices & Electrical EN ISO 9001, EN ISO 13485, EN ISO 14971, EN 62366, EN 62304, EN ISO 26782, EN ISO 23747, IEC 60601-1, IEC 60601-1-2

FDA 510(k) market clearance

MDD 93/42/EEC CE marked

Associations & Institutes ATS/ERS 2005, NIOSH/ OSHA, SSA Disability

Languages

English, French, German, Spanish, Italian, Brazilian-portuguese, Dutch, Russian, Vietnamese, Turkish

Technical

Printing options direct to printer or over network

Data management EasyWare Pro

Interface HL7, XML, GDT

No. of tests > 10'000 tests

Age range Spirometry > 4 years

Device classification Type BF applied part

Operating conditions Temp 0 - 40 °C/32 - 104 °F
Rel. Humidity 5 - 95 %
Atmosph. Pressure 500 - 1060 hPa

Requirements PC/ Laptop

Hard disk capacity Installation/ system 1 GB
Data up to 4 GB

RAM 2 GB

Operating system Windows XP SP3, Windows Vista, Windows 7, Windows 8 and 8.1 (32 and 64 bit)

Parameters

| | |
|------------|---|
| FVC | ATI, BEV, EOTV, FEF10, FEF25, FEF2575, FEF2575_6, FEF40, FEF50, FEF50/FVC, FEF50/VCmax, FEF60, FEF75, FEF75-85, FEF80, FET, FET25-75, FEV.25, FEV.5, FEV.5/FVC, FEV.75, FEV.75/FEV6, FEV.75/FVC, FEV.75/VCmax, FEV1, FEV1/FEV6, FEV1/FVC, FEV1/FVC6, FEV1/VCmax, FEV1/VCext, FEV3/FVC, FEV3/VCmax, FEV3, FEV6, FVC, FVC6, MEF20, MEF25, MEF40, MEF50, MEF60, MEF75, MEF90, MMEF, MTC1, MTC2, MTC3, MTCR, PEF, PEFT, to, VCext, VCmax |
| FVL | ATI, BEV, CVI, E50/150, EOTV, FEF10, FEF25, FEF2575, FEF2575_6, FEF40, FEF50, FEF50/FVC, FEF50/VCmax, FEF60, FEF75, FEF75-85, FEF80, FET, FET25-75, FEV.25, FEV.5, FEV.5/FVC, FEV.75, FEV.75/FEV6, FEV.75/FVC, FEV.75/VCmax, FEV1, FEV1/FEV6, FEV1/FIV1, FEV1/FVC, FEV1/VCmax, FEV1/VCext, FEV3/FVC, FEV3/VCmax, FEV3, FEV6, FIF25, FIF50, FIF50/FEF50, FIF75, FIV.25, FIV.5, FIV1, FIVC, FVC, MEF20, MEF25, MEF40, MEF50, MEF60, MEF75, MEF90, MIF25, MIF50, MIF75, MMEF, MTC1, MTC2, MTC3, MTCR, PEF, PEFT, PIF, to, VCext, VCmax |
| SVC | ERV, IC, IRV, Rf, VC, VCex, VCext, VCin, VCmax, VT |
| MVV | MVV, MVV6, MVVtime, VT |

Predicted normal values Spirometry

| | |
|---------------------------|--|
| GLI | Stanojevic 2009, Quanjer 2012 |
| North America | NHANES III (Hankinson) 1999, Knudson 1983, Knudson 1976, Crapo 1981, Morris 1971 & 1976, Hsu 1979, Dockery (Harvard) 1993, Polgar 1971, Gutierrez (Canada) 2004, Eigen 2003 |
| Latin America | Pereira 1992, Perreira 2006 & 2008, Pérez-Padilla (PLATINO) 2006, Pérez-Padilla (Mexico) 2001, Pérez-Padilla (Mexico, Pediatrics) 2003, Chile 2010, Chile (Pediatrics) 1997 |
| Europe | ERS (ECCS, EGKS, Quanjer) 1993, Zapletal 1977, Zapletal 2003, Rosenthal 1993, Austria 1988, Austria 1994, Sapal-dia 1996, Roca (Spain, SEPAR) 1982, Garcia-Rio (SEPAR) 2013, Vilozni 2005, Falaschetti 2004, Klement (Russia) 1988 |
| Europe Scandinavia | Hedenström 1985 & 1986, Gulsvik (Norway) 1985, Berglund Birath (Sweden) 1963, Langhammer (Norway) 2001, Finnish 1982 (1998), Nystad 2004 |
| Australia | Hibbert 1989, Gore Crockett 1997 |
| Africa, Asia | Ethiopia 1985, JRS 2001 |

Flow/Volume Sensor

| | |
|--------------------|-------------------------------|
| Type | Ultrasonic transit time |
| Range | ± 16 l/s |
| Resolution | 4 ml/s |
| Accuracy | ± 2% or 0.02 l/s |
| Volume | ± 2% or 0.050 l |
| Flow | ± 2% or 0.020 l/s |
| PEF | ± 5% or 5 l/min |
| MVV | ± 2% or 0.050 l |
| Resistance | ~ 0.3 cm H ₂ O/l/s |
| Sample rate | 400 Hz |