

OHD/KoKo[®] PFT Spirometer

FULL FUNCTION PC-BASED SPIROMETER

**Redefining
Accuracy
Beyond the
Standard**



For more than a decade the OHD/KoKo PFT Spirometer has been the number-one choice for both discerning specialists and clinical research studies. The unique Fleisch-type pneumotach redefines accuracy through its unsurpassed ability to compensate for temperature and humidity changes.

Redefining Accuracy — Diagnostic Confidence

OHD KoKo PFT software blends very sophisticated features with a logical and friendly user interface. Populated with numerous predicted equation sets and a choice of three interpretive algorithms, users can be confident in their diagnostic decisions based upon spirometry results.

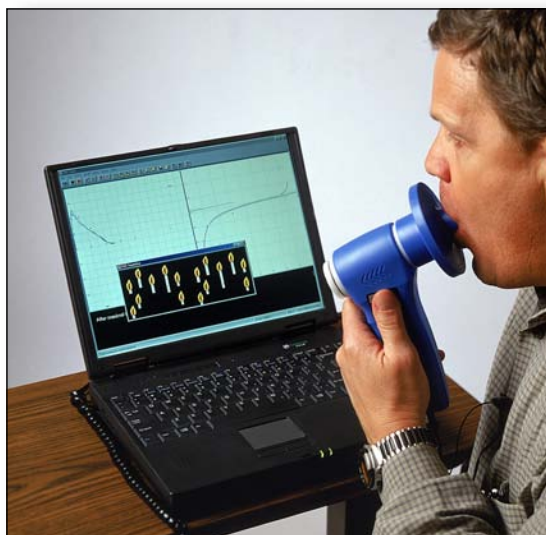
Redefining Accuracy — Improving Outcomes

Independently validated to meet ATS/ERS 2005 recommendations for both ambient and BTPS conditioned air puts KoKo ahead of the competition for accuracy and precision. OHD KoKo PFT software has also been enhanced to comply with all aspects of the ATS/ERS 2005 statement on spirometry!*

1. The OHD/KoKo Spirometer has been independently validated to meet ATS/ERS 2005 recommendations both for ambient and BTPS conditioned air. This puts KoKo ahead of the competition for accuracy and precision. OHD/KoKo PFT software has also been enhanced to comply with all aspects of the ATS/ERS 2005 statement on spirometry!* Many of the current spirometers on the market do not have a letter from the LDS Hospital to validate spirometers to the ATS 2005 standards. The LDS laboratory is currently the industry standard for ATS validation testing. The 2005 ATS recommendations address several new issues of Spirometry, namely diagnostic versus monitoring spirometers, multiple flow calibration of pneumotach based systems, the use of infection control filters, and correction for BTPS: normal body temperature, ambient pressure saturated with water vapor. To address the validation under 2005 ATS recommendations, the LDS laboratory added testing procedures, specifically BTPS correction testing using heated humidified air for accuracy testing "because of potential problems associated with BTPS correction." The data for the

OHD/KoKo spirometers exceed these recommendations.

2. The OHD/KoKo Spirometer utilizes a BRASS "Fleisch-Type" pneumotach, proven in the industry to provide unparalleled accuracy and durability. The brass pneumotach gives better accuracy because of its unsurpassed ability to com-



penstate for temperature and humidity changes. Most of the other Fleisch-type pneumotachs are made of plastic or of a disposable material, which are not as accurate as the brass type. If you calibrate only once a day using other systems, you may not be calibrating each pneumotach. This may

decrease accuracy and reproducibility, and keep you from achieving the 2005 ATS Standards.

3. The OHD/KoKo Spirometer has 22 predicted sets built into the software, including the respected Hankinson (NHANES III) predictives, as well as Hankinson / Wang/ Eigen predicted sets.

4. The OHD/KoKo Spirometer gives you side-by-side real-time Flow/Volume Loop and Volume/Time graphics during an actual test. Many of the current spirometers do not give any curves in real time but only when printed. It is very important to be able to view both curves in real time for a better understanding of the effort. The stand-alone spirometers only give you the curve when you print or only the Volume/Time curve on volume spirometers. The technician needs to view the curve during the actual test.

5. The OHD/KoKo Spirometer gives you multiple incentive graphics for patient/employee coaching. If you have an employee that is borderline for respiratory clearance, the incentive can often-times help the user to achieve the

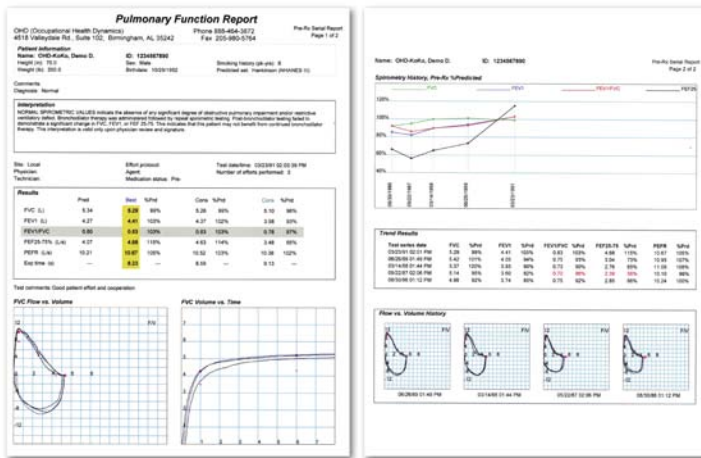
Features & Benefits

minimum requirements. The visual incentive is related back to that person's predicted normals so that the graphic display challenges the particular test subject according to his or her

predicted abilities. The incentive screens include blowing out candles on a birthday cake, blowing a sailboat across the water, and 5 others. The incentive graphics may produce an improved effort as well as a better understanding of the objective.

6. The OHD/KoKo Spirometer utilizes a high precision multi-flow calibration syringe. This increases accuracy, reproducibility, and ease of calibration. Our multi-flow calibration syringe gives you the exact flow rates for each calibration speed, and all the calibration records are stored for future reference!

7. The OHD/KoKo Spirometer has trend analysis of employee/patient results built into the software. The benefit to you is that you can immediately trend a person's FVC, FEV1, FEV1/FVC, PEFR (or any other PFT parameter). If an employee's results are 120% of predicted and lower limits of normal are around 70% of predicted, you would not find problems with that employee's PFT for several years, unless you were doing a historical trend analysis. To do this, one would have to pull the charts and manually trend the data. We do this for you without having to pull the records. All you do is select our trend report, and it immediately gives you the historical trend.



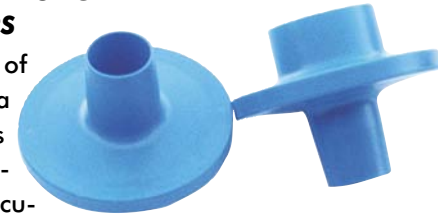
9. The OHD/KoKo Spirometer is Windows based and may be used in a network environment. On most stand-alone spirometers you cannot save past tests, calibration records, or even demographic data on the employee. Each time a person is tested the demographic data has to be re-keyed, which takes extra time. All previous tests and calibration records are easily accessed for viewing and printing.

With the addition of the KoKo nSight, networking and connectivity is fully compatible with the majority of electronic medical record systems (EMR) and hospital information systems (HIS). HL7 OE Server for KoKo, will allow HL7 integration with EMR and HIS systems. The OHD KoKo software is also compatible with popular medical management software including Medgate, OHM, and Systoc.

ACCESSORIES

PULMONARY FUNCTION FILTERS

- Filtration of bacteria and viruses
- Low resistance for accurate spirometry testing
- Low dead space as required for lung volume and DLCO testing
- Four standard port sizes and a wide selection of adapters allow the OHD Filter to be used with virtually any pulmonary function instrument
- Cost effective



MULTI FLOW CALIBRATION SYRINGE

This patented technology incorporates flow limiter valves that assist the user in achieving and maintaining several specific flow rates during volume calibration. These flow rates are selected by simply turning the dial at the end of the syringe to the desired setting.

FEATURES

- Includes all of the advanced features of the KoKo syringe
- Complies with 2005 ATS/ERS and NIOSH recommendations for multiple flow calibration linearity checking
- Dual locking collar to allow various volume settings without altering the certified 3-liter setting
- Flow limiter settings for .5, 1 and 3-liters per second
- Open setting for standard operation



OHD KoKo Spirometer

Tests Performed:

FVC, SVC, Pre- and Post- BD, MVV, Challenge

Parameters Measured (in FVC test):

Expiratory:

FVC, FEV.5, FEV.5/FVC%, FEV1, FEV1/FVC%, FEV3, FEV3/FVC%, FEV6, FEV6/FVC%, FEV1/FEV6%, PEFr, FEF25%, FEF50%, FEF75%, FEF25-75%, FEF2-1.2, FEF75-85%, Tpeak(ms), Vext%, Vext(l), MET(s), Texp(s), Veot(l)

Inspiratory:

FIVC, FIV.5, FIV.5/FIVC, FIV1/FIVC, FIV3, FIV3/FIVC, PIFr, FIF50%, FIF25-75%, FIF2-1.2, FIF50/FEF50, MIT(s), Tinsp(s)

Pneumotach:

Brass Core Fleisch-type Pneumotachometer

Calibration:

Three injection mode; one injection mode; Supports both one and three liter calibration syringes.

Filter Requirement:

KoKoMoe (model #810000 or #819000)

Power Equipment:

Power derived from USB port

Accuracy:

< +3% or 100 ml, whichever is greater; research grade accuracy of <1% can be set via calibration

BTPS Correction:

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Reproducibility:

<+ 0.5% or 0.150 l, whichever is greater

Volume Range:

+16 l

Flow Range:

+16 l/s

Resistance:

<1.5 cmH₂O/l/s when tested with KoKo Moe filter

Memory Storage:

Unlimited - dependent on hard disc drive or network server capacity

Predicted Sets:

Crapo 1981, Polgar (Pediatrics), ITS 1984, Knudson 1976/1983, ECCS 1983/1993, Hankinson (NHANES III) 2000, Toronto 1991, Morris F 1988/1971, Gore (Australia) 1995, Pereira (Brazil) 1996, Dejsomritrutai (Thai) 1996, Miller 1996, Eigen (preschool pediatrics), Viljanen/KLNW (Finland), Hendenstrom/Solymar (Sweden), Gulsvik (Norway), SEPAR (Spain), Forche (Austria), Hibbert (Pediatrics), Shands (mixed), Wang (Pediatrics), Pereira (Brazil) 2002, Knudson 1976.

Interpretation Algorithm:

McKay (ATS / ARRD 1991); ITS; Modified Ellis

Reports:

Unlimited self defined, multiple preset designs.

Incentive Graphics:

Candles, sailboat, 3 pigs, flying kite, brick wall, Carnival Time, Fill Your Lungs

Connectivity:

Network compatible interface to electronic medical records via HL7. Client version can automatically share data with nSpire Health Raptor pulmonary lab analyzers.

Computer Requirements:

Celeron or equivalent; 1 GB RAM; CD Drive; 100 MB of available disk space; USB 2.0 or greater; Windows XP Professional, Windows Vista Premium, or Windows 7 Professional (32 or 64 Bit).

Dimensions:

18 x 10 x 5 cm; 7.1 x 3.9 x 2 inches
0.3 kg; 0.7 lbs

Construction:

High-impact Polycarbonate

Operating Environment:

10 - 40° C; 0 - 80% relative humidity non-condensing at temperatures to 31° C

EMC Rating:

Radiation and conducted emissions and immunity per EN 60601-1-2

Performance Standards:

ATS/ERS 2005 - properly measures all 26 flow-time waveforms; BTS; NIOSH; ACOEM; MDD

Quality Standards:

FDA QSR, ISO 13485:2003, MDD 93/42/EEC, EN 60601-1, 60601-1-1, 60601-1-2, 60601-1-4, CMDCAS/ Health Canada

Calibration Syringe

Syringe body and shaft

Anodized aluminum

End caps and port

MultiFlow™—machined acetal plastic
Syringe molded polycarbonate
Seal
Teflon® seal energized by a stainless steel, slant/coil spring

Tolerance

Better than + .5% or + 15ml

Volume

3-liters adjustable in .10L increments with a locking collar and allen wrench (supplied)

Calibration interval

Recommended annually

Operating environment

Recommended 20-30°C

Dimensions

56 x 12cm

Weight

3kg

Intended use

Volume calibration of PFT equipment

PULMONARY FUNCTION FILTERS

Filtration efficiency

Bacteria filtration—99.99%, Viral filtration—99.9%

Resistance

0.4-0.7 cm H₂O/L/sec. depending on test methodology

Dead space

Approximately 50cc

Material

Material: outer housing Impact Polystyrene
- Filter Media: Technostat modocrylic-polypropylene.



OCCUPATIONAL HEALTH DYNAMICS

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