QUANTIFIT®

The Gold Standard In Respiratory Fit Testing

OCCUPATIONAL HEALTH DYNAMICS
OHD

Quantifit...the Gold Standard in Respirator Fit Testing

Here's how the Quantifit works:

During a fit test, the respirator inlets are capped with test adapters, and the inhalation valves are removed from the mask. With the test subject holding his or her breath for no more than ten seconds, the Quantifit then establishes and maintains a slight vacuum, or ***controlled negative pressure****, inside the mask. Since the respirator inlets are sealed, all sources of leakage into the mask are through the face-to-facepiece seal. The volume of air drawn out of the mask by the Quantifit during this short period of time is equal to the leak rate into the mask through the face-to-facepiece seal.*

It's that simple....

Quantitative respirator fit testing is a practice that has been around since the late 1960's. While there have been several ways in which to perform a respirator fit test, there were never any scientific studies to prove that these methods actually worked. These technologies have simply been "accepted" because they were the only way to do quantitative fit testing. The technology seemed to make sense, and at least it was better than nothing at all. Or was it?

Things changed in 1992 when Controlled Negative Pressure (CNP) was implemented as a whole new approach to fit testing. This revolutionary way to perform a respirator fit test could be subjected to scientific scrutiny. The results? Unlike all other methods of fit testing, Controlled Negative Pressure was proven to quickly and accurately measure respirator leakage, which is the key to measuring respirator fit.

CNP technology was accepted by OSHA in 1998, and has quickly been adopted by industry to be the the gold standard in respirator fit testing.

While old technologies are sometimes hard to give up because, "we've just always done it that way," the OHD Quantifit offers an impressive array of advantages that can dramatically improve a respiratory protection program. Within the first ten seconds of testing, the Quantifit can determine whether the respirator user has a basic fit or not. And the OSHA-accepted CNP Redon protocol takes as little as two to three minutes. If other quantitative fit test instruments measured accuracies of less than 40%[1], why put your employees at risk?

The Redon test protocol allows you to quickly assess respirator fit based on three mask donnings. Given the Quantifit's speed and accuracy in measuring actual respirator leakage, why subject your employees to something other than the best?

Features & Benefits

Proven Technology The OHD Quantifit is a highly specialized instrument which utilizes the scientifically-proven and patented CNP (Controlled Negative Pressure) technology to directly measure respirator leakage. The OHD Quantifit is accepted by OSHA and appears in the Federal Regulations governing fit testing [29 CFR 1910.134]. The Quantifit is also included in the Canadian Standards [CSA Z94.4-2011] and UK HSE Standards [EN132-149].

Fastest Fit Testing Available With the OSHA-approved CNP REDON respirator fit test protocol, a fit test can be performed in as little as 2-3 minutes and there is no waiting period for smokers as required with other fit test methods. The REDON protocol uses CNP technology's superior speed and accuracy to help achieve the best respirator fit possible. The multiple donnings required assures that the worker knows how to don the respirator correctly with each use.

Most Health Protective Peer-reviewed scientific studies have shown that the OHD Quantifit produces much more accurate, more health protective, and more believable test results than other systems. In studies where a known calibrated respirator leak was present, the OHD Quantifit measured 98% of known calibrated leak. The aerosol-based system measured only 37% of known calibrated leak[1].

Easy to Use The Quantifit takes the user through the test protocol step-by-step so that there is no guess-work, and very little time is needed to instruct the employee being tested. There is no instrument warm-up period to worry about, and the one-minute daily calibration assures that the Quantifit is working within a strict tolerance. Ease of use means less mistakes, and quicker testing.

Most Rigorous Test The use of ambient air as a standard (non-varying) gaseous challenge agent, provides a more rigorous test of mask fit than does an aerosol agent. If air leaks into a respirator, there is a chance that particles, vapors, or gas contaminants may leak in. When using aerosol-based systems, the test system can only see and measure *some* of the particles that *might* enter the respirator.

Direct Measurement of Leak The Quantifit directly measures facepiece leakage. There are no specific conditions or environmental concerns when testing with the OHD Quantifit. The unit precisely measures leak rate (in cc/min) by determining the amount of air that leaks into the respirator during the fit test.

NIST Calibration The ability to calibrate the Quantifit with generally available primary calibration systems assures a higher standard of test results (NIST traceable standard).

On-board Software Not only does the on-board software allow the Quantifit to be extremely flexible, but all updates can be achieved through a flash-upgrade. Users can download software from the internet and easily upgrade the Quantifit to assure the latest and most up-to-date version.

On-board Storage The Quantifit can save records in its on-board memory. These records can later be transferred to the included FitTrack Gold software on a personal computer.

Keyboard Interface The Quantifit can use a keyboard to input data into the local memory. This allows the user to enter an employee's name and ID number, as well as the respirator information. Keyboard input is easier and quicker than touch-screen or other input methods.

USB Computer Interface The Quantifit can be connected to a computer for operation through FitTrack Gold™ software. This gives the user more control and advanced record keeping opportunities.

USB Memory Stick Interface While data can be transferred to a PC via the USB connection, one may also transfer data via a USB memory stick.

USB HP Printer This printer connection allows for tests to be printed directly from the Quantifit, without the need for a personal computer. (Visit our website for a list of compatible HP printers.)

Optical Encoder Knob The navigational knob on the Quantifit allows for fast and intuitive navigation through the menus on the instrument. This helps to achieve fast and dependable data entry.

Tilted Backlit Display The display can be adjusted for any lighting situation, and is tilted for optimum viewing whether the operator is standing or sitting.

Universal Power Cord The power cord for the Quantifit will adjust to the proper voltage regardless of the country in which the testing is being performed. The end user will simply swap out the prong configuration to interface with the local settings.

Flexible Data Management Software While the OHD Quantifit can be used as a stand-alone unit, FitTrack Gold software allows for easy testing and dependable record keeping through a personal computer. FitTrack can print individual reports or summary reports in many configurations. Data can be imported and exported to meet various needs. Users can share a common database or sync to a database on a shared server.

[1]*C Crutchfield, D Park,* Effect of Leak Location on Measured Respirator Fit, *Am. Ind. Hyg. Assoc. J. 58:413-417, 1997.*

Quantifit Specifications

Selectable Test Model Parameters
Equivalent Fit Factors are calculated from actual measured respirator leak rates, based on the following "modeled" test parameters which are user selectable in custom protocols:

Inspiratory Work Rate
Measurement of energy expended by test subject in the normal working environment; indicated in thousands of calories per hour (K-Cal/hr). Selections include
- 100 (light activity)
- 200 (moderate activity)
- 300 (heavy activity) and
- 350 (extreme activity)

Mask Type
Selections for full-face or half mask respirator types.

Standard 5-Step Protocols
- **Redon** (for use with air-purifying respirators)
- **CBRN** (for respirators used for chemical, biological, radiological, nuclear applications)
- **SCBA** (for self-contained breathing apparatus)
- **CSA-SCBA** (Canadian SCBA protocol)
- **Custom** (user-defined protocol)

Dynamic Range
Leak Test Measurement
2 – 5,000 cc/min
Resolution
0.1 cc/min
Fit Factor Computation
6 – 53,000

Pressure Sensor Parameters
Pressure Range
0-20 inches H_2O
Resolution
0.01 inch H_2O
Accuracy
± 0.25% FS
Over-Pressure Limit
60 inches H_2O
Temperature compensation
15° to 30° C (60° to 85° F)

Instrument Accuracy
Challenge Pressure
± 5 %
Leak Rate Measurement
±3% or ±3 cc/min, whichever is greater

Display
LCD Graphical 128 X 64 Pixels

USB Interface
Dual Type A Ports
Supports Keyboard, HP Inkjet printer, or memory stick
Single Type B Port
For connection to PC

Setup Memory
EEPROM, All Parameters

RTC, Datalog Memory
Rechargeable Battery

Data Retention
2 Years Without Power

Operating Range
15° to 30° C (60° to 85° F)

Storage Range
-40° to 60° Celsius (-40° to 140° F)

Construction
Enclosure – Polyethylene Plastic Chassis – 1/8" Aluminum, Face – Lexan, Back Printed

Size
5.5 x 10 x 15.5 inches
139.7 x 25.4 x 393.7 mm
(HxWxD)

Weight
< 7.5 lbs. (3.4 kg)

Connections
Pressure: Quick Connect
Vent: Female Luer
Trigger Button : Phono Jack

Power Source
100 –240 VAC, 50/60 Hz

Power Supply Adapter
9 VDC, 5000 mA

Power Consumption
Less than 1000 mA

Warranty
Instrument Coverage
Two-Years Parts and Labor.
Accessory Coverage
One-Year Parts and Labor.
Technical Support
No-charge phone support to original owner of instrument.

Certifications
UL, CE, CSA

Standard Accessories
- Hardcase with roller wheels, custom insert, and retractable handle
- USB Keyboard
- Power Cord
- Trigger Button
- Triple Tube Assembly
- PC USB Cable
- FitTrack Gold Software
- Training DVD
- Operator's Manual

Optional Accessories
- Fit Test Respirator Adapter
- USB Printer
- Fit Test Card Laminator Kit
- Extended Warranty
- Prepaid Service Agreement

Optional Respirator Fit Test Adapters
- 3M Company
- AO Safety
- Avon Protection
- Bacou/Dalloz/Willson
- Bullard/Sabre
- Draeger
- Glendale/Bilson
- Honeywell/Sperian
- International Safety Instruments (ISI)
- Interspiro
- Kemira
- Mine Safety Appliances (MSA)
- Moldex
- North Safety
- Protech
- RSI
- Scott
- Sperian (formerly Survivair)
- Sundstrom
- US Safety
- Call for information on additional respirator manufacturers and models.

FitTrack Software
PC Requirements
Pentium 4, 2.5 GHz or better
RAM
2 MB or greater
Operating System
Windows® Vista, 7, 8
Digital Interface
USB 2.0 Port
Disc Space
400MB minimum
Printer used with software
Any Windows-compatible printer

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