PORTACOUNT® Plus
Model 8020 Respirator Fit Tester

PORTACOUNT® Plus Features
- Computes respirator fit factor using microscopic particles in ambient air
- Measures fit factors to greater than 10,000
- Tests any respirator type with a tight fitting facepiece, including disposables
- Includes FitPlus™ Fit Test Software for automating the fit test
- Set pass/fail level from the keypad
- Set number of exercises from the keypad
- Digital display indicates the exercise number in progress
- Direct readout of fit factor
- Optional sampling adapters allow employees to be tested in their own respirators
- Compatible with the new N95-Companion for fit testing Series 95 disposable respirators

Software Features
FitPlus Software is included with every PORTACOUNT Plus.
- OSHA–compliant fit test protocol
- Pre-loaded for compliance with OSHA, ANSI and international fit test protocols
- User-definable pass/fail level
- Real-time fit factor display
- Search for, retrieve, view on screen and print individual test records
- Large on-screen exercise descriptions enable you to “oversee” the test from a distance
- Customize your own report formats
- Optional fit test card printer

Included with the Instrument
- Carrying case
- AC adapter
- Alcohol supply (enough for approximately 500 hours of operation)
- FitPlus Fit Test Software on CD
- Operation and service manual
- Training video
- Computer interface cable
Optional Accessories

- Model 8095 N95-Companion (for fit testing series-95 disposable respirators)
- Model 8901 Fit Test card printer
- Model 8026 Particle Generator (included with N95-Companion)
- Sampling adapters for select respirator models

Specifications

PORTACOUNT Plus Model 8020 Respirator Fit Tester

- Fit Factor Range: 1 to greater than 10,000
- Concentration Range: 0.01 to 5 x 10⁵ particles/cm³
- Particle Size Range: 0.02 to greater than 1 micrometer
- Typical Fit Factor Accuracy: ±10% of reading
- Respirator Facepieces That Can Be Fit Tested: Full-face elastomeric, Half-face elastomeric, NIOSH series-100 filtering-facepiece, NIOSH series-99 filtering-facepiece, NIOSH series-95 filtering-facepiece*
- Fit Factor Measurement: Direct measurement of fit factor (Cout / Cin)**
- Size: 9.5 in. x 7.5 in. x 5.5 in. (24 cm x 19 cm x 14 cm)
- Weight: 3.3 lb (1.5 kg) Unit Only, 13 lb (5.9 kg) With Standard Accessories and Case
- Power: Autosensing 100 to 250 VAC, 50 to 60 Hz
- Flow Rate: Sample 100 cm³/min, Total 700 cm³/min (nominal)
- Temperature Range: Operation 32 to 100°F (0 to 38°C), Storage -40 to 160°F (-40 to 70°C)
- Alcohol Hours Per Charge: 8 hours at 70°F (21°C)
- Alcohol Type: 99.5%+ reagent grade isopropyl
- RS-232 Output: User-selectable: 300, 600, 1200, 2400, 9600 (factory set at 1200)
- Baud Rate: User-selectable: 300, 600, 1200, 2400, 9600 (factory set at 1200)
- Carrying Case Size: 21 in. x 14 in. x 8.3 in. (53 cm x 36 cm x 21 cm)
- Pass/Fail Setting: User-selectable: 0, 100, 250, 500, 1000, 1250, 1667, 2000, 4000, 5000, 6667, 10000 (other values can be programmed by user)
- Factory Recalibration Interval: One year
- Warranty: Two years on workmanship and materials

* N95-Companion accessory required for series-95 only.
** Mask leakage is measured simultaneously while test subject moves and breathes.

How the PORTACOUNT Plus Works

The PORTACOUNT Plus measures the particle concentration inside and outside the respirator and calculates a fit factor, the ratio of the two measurements. As with any aerosol-based quantitative fit testing technique, the respirator must be equipped with high efficiency filters. Since few particles penetrate a high efficiency filter, any found inside the respirator can be attributed to face seal leakage.

Particles entering the PORTACOUNT Plus pass through a saturator tube where they are combined with alcohol vapor. They then pass into a condenser tube where alcohol condenses on them, causing each to grow into a larger droplet. The droplets then pass through a focused laser beam, producing flashes of light which are sensed by a photodetector. The particle concentration is determined by counting the light flashes.

This unique single particle counting capability differentiates the PORTACOUNT Plus from all other fit testing techniques or instrumentation. The PORTACOUNT Plus detects lower concentrations of particles, up to several orders of magnitude lower, than other methods. Thus, it will operate with ambient aerosol, eliminating the need for high concentrations of aerosol generated in a tent or chamber.

Minimum PC Hardware Requirements for FitPlus Fit Test Software

Microsoft® Windows 2000, XP
RS-232 serial port or USB-to-Serial Convertor