Knowledge Beyond Measure.

TSI OmniCount™ Wearable Respiratory Protection Assessment System (WRPAS)

Model 3002

High-Performance Fit Assessment for Real-World Military Conditions

The TSI OmniCount™ Wearable Respiratory Protection Assessment System (WRPAS) Model 3002 sets a new standard for fit assessment in military and defense applications. Designed for battlefield protection factor measurements, this rugged and portable system delivers reliable, water-based particle counting during physically demanding tasks such as crawling, climbing, and sprinting under load.

Unlike traditional systems, the OmniCount™ WRPAS is fully wearable, lightweight and motion-tolerant, enabling fit testing under realistic situations—no need for upright posture, stationary setups, or external power sources. Whether you're evaluating CBRN respirators, conducting Simulated Workplace Protection Factor (SWPF) Studies, or running live agent trials, the OmniCount™ WRPAS offers unmatched performance in dynamic environments.

Features and Benefits

- Detects ultrafine particles ranging from <10–1,000 nm
- Measures high particle concentrations – up to 200,000 particles/cm³
- 4 hours of battery life (at 20°C) with hot-swappable battery and plug-in options
- Water-based operation – no alcohol, no flammable fluids
- Orientation-free measurements – accurate results in any position or motion
- Fully wearable, lightweight, and portable – ideal for dynamic fieldwork and mobility
- Motion-tolerant – supports realistic movements like crawling, climbing, sprinting
- Two channels for simultaneous, second-by-second measurements from inside and outside a respirator
- Built-in accelerometer and differential pressure sensor for measuring motion and breathing
- Easy data management – onboard data logging, Bluetooth® and USB-C connectivity for untethered or wired measurements, PC software support

Applications

- Battlefield protection factor studies
- Simulated Workplace Protection Factor (SWPF) Studies
- Respirator fit assurance under real-world conditions
- Soldier field readiness measurements
- Military and defense respirator development and validation
- Live-agent and CBRN testing protocols

Specifications

OmniCount™ Portable Water-Based Condensation Particle Counter

Model 3002

Number of Channels
2

Sample Flow Rate
0.1 L/min per channel

Particle Size Detection (D_{50})
<10 nm

Concentration Range:
0 to 200,000 #/cm^3

Concentration Accuracy*
±20%

Channel to Channel Agreement
±15% (wicks at equivalent saturation states)

Zero Count Performance
<0.01 #/cc, for $T_{Mod} < T_{Sample\ Dew}$, ~75% RH

Response Time
$t_{10\text{-}90}$<2s

Environmental Operating Conditions
8-38°C

75-105 kPa

0-90% RH (non-condensing)

Wick Life
Typically > 8 h, but dependent on sample RH

Battery Life
>4 hours at 20°C

Data Storage Capacity
Standard Mode: 24 hours

Fit Test Mode: 19 hours

High Frequency Mode: 11 hours

Data Sampling Rate
Particle Concentrations: 1 Hz

Differential Pressure: 10 Hz

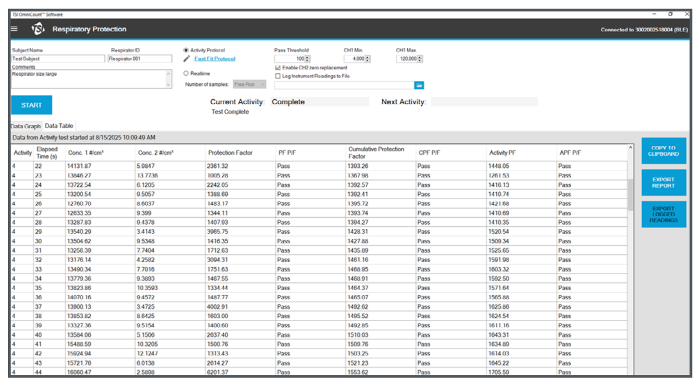
3-Axis Accelerometer: 150 Hz

Weight
1 kg (2.2 lb)

Dimensions
16 cm x 12 cm x 8 cm (6.6 in. x 4.7 in. x 3.1 in.)

*At 25°C, with fully saturated wicks. Absolute accuracy decreases with two or more of the following occurring simultaneously: partially saturated wicks, elevated temperatures, and elevated concentrations, as indicated by pulse ratio status.

TSI® **OmniCount™** Software



TSI® **OmniCount™** Software

Bluetooth® LE Module Specifications for Taiwan Compliance:

RF Module Brand Name	u-blox
RF Module Model	NINA-B306
RF Frequency Range	2400-2480 MHz
RF Band	2.4 GHz, 40 channels
NCC ID	CCAI19LP1670T0

To Order

Specify	Description
3002	OmniCount™ Wearable Respiratory Protection Assessment System
3002-WICKKIT	Set of two replacement wicks
3002-BATTERY	Spare battery pack
3002-BATTCHARGER	2 port external battery charger

Specifications are subject to change without notice.

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