

High performance portable air monitor for personal exposure assessment and microenvironment monitoring

PEK(Personal Exposure Kit) is mainly used for personal exposure measurement of gas pollutants, noise and light intensity. As portable as a smartphone, it can be easily carried around anytime and anywhere. With only one button for power switch and ultra-quiet operation design, it is very convenient to use as a personal exposure monitor. The monitoring data is accurate and reliable and can be used as professional personal exposure research equipment.



PEK-LITE

PEK-Lite can measure up to three common air pollutants and can be customized according to user requirements. SD card data storage, USB fast reading data;

PEK-PRO

PEK- Pro can measure PM2.5&PM10 and up to four common air pollutants*. Gas pollutants can be customized according to user requirements. GPS and 4G transmission functions enable the users to easily download, view, analyze and manage data.

*CO₂ + other three air pollutants

PEK-PLUS

PEK- Pro can measure PM2.5&PM10 and up to FIVE air pollutants* (CO₂ and TVOC must be included), and three common pollutants can be customized according to user requirements. GPS and 4G transmission functions enable the users to easily download, view, analyze and manage data.

*TVOC and CO₂ + other three air pollutants.



Product Features

- Appearance color optional; Mountain grey, streamer white;
- All-aluminum body, CNC integrated molding, designed in style of simplicity and exquisite texture;
- As portable as a smartphone; Versatile carrying methods: hung on the chest, fixed to the upper arm or other carrying methods;
- SD card data storage, 4G data transmission; GPS function enabled*;
- Built-in rechargeable lithium battery, ultra-low power consumption, long battery life.
- Diffusion based sampling, ultra-quiet operation;
- PM counter for multichannel particle concentration measurements;
- Integrated CO₂ sensor for indoor ventilation condition (PEK-PRO and PEK-PLUS);
- Three gas pollutants, sound, light, noise, etc. can be monitored at the same time. The monitoring accuracy of NO, NO₂, O₃, SO₂ and NO is in ppb level and CO in ppm level;
- Direct output of gas concentration based on chip algorithm (AoC);
- Sapiens patented dynamic baseline correction technology makes suitable in the monitoring of atmospheric pollutants under versatile micro-environments with dynamic changing humidity and temperature transients.

Application

- Personal exposure monitoring research of air pollutants
- Indoor air pollution monitoring
- Microenvironmental pollution monitoring
- Environmental exposure risk warning for patients with respiratory diseases
- Emergency air quality monitoring
- School/community air quality monitoring

	PEK-LITE	PEK-PRO	PEK-PLUS
Size	124 × 70 × 26.4 mm	136 × 85 × 30 mm	136 × 90 × 30 mm
Weight	<300g	<500g	<600g
SD card storage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4G data transmission	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Particle pollutants	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Common air pollutants	Three	Three+CO ₂	Three+CO ₂ +TVOC
Battery Life	90 h	30h	24h

Technical Specifications

Comment Pollutants	Working Principle	Range	Detecti on Limit	Resoluti on	Accuracy
PM ₁ , PM _{2.5} , PM ₁₀	Humidity and refractive index correction laser scattering sensor	0-1,000 µg/m ³	1 µg/m ³	1 µg/m ³	± 5 µg/m ³ or 15% measured concentration
Nitrogen Dioxide (NO ₂)	Dynamic baseline electrochemical sensor	0- 5 ppm	5 ppb	1 ppb	± 5 ppb or 10% measured concentration
Ozone (O ₃)	Dynamic baseline electrochemical sensor	0- 5 ppm	5 ppb	1 ppb	± 5 ppb or 10% measured concentration
Carbon Monoxide (CO)	Dynamic baseline electrochemical sensor	0- 20 ppm	0.05 ppm	0.01 ppm	± 0.01 ppm or 10% measured concentration
Sulfur Dioxide (SO ₂)	Dynamic baseline electrochemical sensor	0- 5 ppm	10 ppb	1 ppb	± 10 ppb or 15% measured concentration
Nitrogen Monoxide (NO)	Dynamic baseline electrochemical sensor	0- 5 ppm	5 ppb	1 ppb	± 5 ppb or 10% measured concentration
Optional Gas Module					
Total Volatile Organic Compounds (TVOCs)	PID	0- 20 ppm 0- 500 ppm	5 ppb 75 ppb	1 ppb 0.1 ppm	± 10 ppb or 10% measured concentration ± 0.1ppm or 15% measured concentration
Carbon Dioxide (CO ₂)	NDIR	0-5000ppm	300 ppm	1 ppm	±30 ppm or 10% measured concentration

Environment	Working Principles	Range	Resolution	Accuracy
Air Temperature	PTAT (integrated)	-15~50°C	0.1°C	±0.2°C
Air Humidity	Capacitive polymer	5- 95 %	0.1 %	± 2 % at 23 °C
Light(Optional)	LDR Light dependent resistor	1—65535 lx	1lx	±20% of measured concentration

Environment	Working Principles	Sampling Method	Accuracy
Noise (Optional)	Silicon condenser micromachined microphone	Outward	-42dB (@1kHz, 0dB=1V/Pa)

System Specifications

Features	Descriptions
Environmental Operating Range	Temperature: -10~50°C; Relative Humidity: 0~99 %; Pressure: 80kPa~120kPa
Power Input	5 V DC
Power Consumption	0.8W
Battery Life	< 30 h with 4G transmission enabled; > 80 h with only SD card storage
Battery Charging Time	About 6h
GPS(Optional)	GPS module enabled
Date Storage	16G SD card
Date Communication	USB fast reading
Gas Sampling	Diffusion based sampling, ultra-quiet operation
Sampling Rate	1 min