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Dust Measuring Device

PCE-RCM 05

I . Overview

Atmospheric particulate matter (PM) is microscopic solid or liquid matter suspended in the Earth’s atmosphere, which can adversely affect human health. PM2.5 particles are air pollutants with a dia of 2.5µm or less, containing soot, smoke, metals, nitrates, sulfates, dust, water, and tire rubber.

When we breathe, PM2.5 can get deep into our lungs and some may even get into bloodstream. Exposure to fine particles can affect the heart and lungs

PCE-RCM 05 is a desktop air quality monitor mainly used for monitoring PM2.5 concentration in homes, shopping malls, offices, stations, etc.

This manual includes information about safety and warning. Please read carefully and follow all warnings and precautions before using the device.

II . Open box inspection

Open the box and take out the device, please check if the items are missing or damaged:

1. USB cable -----1
2. User manual -----1

III. Safety instructions

1. Check the device and its accessories for any damage or anomaly before use. Do not use the device if the cover is damaged, or has any other malfunctions.
2. Please follow the operation instructions.
3. Please do not open the device case and modify the internal circuit.
4. Do not store or use this device in high temperature, high humidity, flammable, explosive and strong electromagnetic environment.

IV. Structure



1	LCD screen	2	°C/°F unit selection button
3	Power ON /OFF button	4	Backlight button
5	USB charge port	6	


V. Symbols



1	Battery icon	7	Temperature unit
2	PM2.5	8	Humidity value
3	PM2.5 value	9	Humidity unit
4	PM2.5 grading emoticons	10	Humidity icon
5	Temperature icon	11	PM2.5 unit
6	Temperature value		

VI. Operation instruction


1. Power ON /OFF

Long press  button to turn ON/OFF the device

2. C/F selection


Short press  button to switch the unit between C and F

3. Backlight





Short press  button to turn on /off the backlight

Default: backlight is off.

- When the particle concentration exceeds the standard value ($115\mu\text{g}/\text{m}^3$), the red backlight turns on
- When the particle concentration returns to normal value ($\leq 115\mu\text{g}/\text{m}^3$), the red backlight will automatically turns off

Note: The red light stays ON if the concentration exceeds $115\mu\text{g}/\text{m}^3$. You can short press  button to turn off the backlight.

4. Battery

	Enough power
	Suggest to charge the battery
	Power is running out, please charge the battery
	Power off

➤ Notes




- Use USB cable to charge the device.
- It takes around 3 hours to fully charge the device. This device can be used while charging.
- Power supply: 5V/1A.




VII. Performance parameters

1. Technical specifications

Function	Range	Resolution	Accuracy	Remark
PM2.5	$0\sim 500\mu\text{g}/\text{m}^3$	$1\mu\text{g}/\text{m}^3$	$\pm(10\mu\text{g}/\text{m}^3+10\text{dgt})$ @ $0\sim 100\mu\text{g}/\text{m}^3$ range	Ambient temperature: $18\sim 28^\circ\text{C}$ Ambient humidity: $40\%\sim 75\%\text{RH}$
			$\pm(10\%+30\text{dgt})$ @ $101\sim 400\mu\text{g}/\text{m}^3$ range	
			$\pm(10\%+50\text{dgt})$ @ $401\sim 500\mu\text{g}/\text{m}^3$ range	
Temperature	$-10\sim 50^\circ\text{C}$	0.1°C	$\pm 1^\circ\text{C}$	
Humidity	$0\sim 99\%\text{RH}$	$1\%\text{RH}$	$\pm 5\%\text{RH}$ @ $30\%\sim 80\%\text{RH}$ $\pm 8\%\text{RH}$ @ $<30\%\text{RH}, >80\%\text{RH}$	Temperature $18\sim 28^\circ\text{C}$

PM2.5 Concentration emoticons

Concentration ($\mu\text{g}/\text{m}^3$)	Emoticon	Backlight
0-35	 Excellent	White
36-75	 Good	White
76-115	 Light pollution	White

Concentration ($\mu\text{g}/\text{m}^3$)	Emoticon	Backlight
116-150	 Middle level pollution	Red
151-250	 Serious pollution	Red
251-500	 Bad pollution	Red

3. General specifications

- Display: LCD screen
- Working principle: laser scattering
- Alarm: visual (red light)
- Backlight: dual color LED backlight

4. Operation environment

- For indoor/outdoor environment or vehicles
- Altitude: ≤ 2000 s
- Operating temperature: $-10\sim 50\text{C}$
Operating humidity: $0\sim 99\%$ RH
- Storage temperature: $-20\sim 60\text{C}$

5. Precautions

- When measuring, please take more than 10 minutes to obtain a stable value.
- It is normal to have several digits difference at different locations within one space because PM2.5 suspends unevenly in the air. Use the concentration grading emoticons to judge the air quality.
- When measuring, please do not use fan, hair dryer, fan heater, etc. to blow into device.
- Do not block the air inlet and outlet.
- When measuring the temperature and humidity, it takes $20\sim 30$ minutes for the device to obtain the accurate value.
- To avoid anomaly, please use the device under specified operation environment.

VIII. Maintenance & Warranty

1. Maintenance

Warning: To avoid false readings and damages, please do not open the device case. Do not crash, drop, bash, or soak the device.

- a. The maintenance and service of the device must be implemented by qualified professionals or the designated departments.
- b. Regularly use dry cloth to clean the cover. Do not use the detergent containing solvent composition
- c. To conserve battery, please turn off the device if do not being used for a long time.

2. Warranty

The following situations are beyond the scope of the warranty.

- Damage caused by users' disassembling or improper use of the device
- Purchase without receipts