

# (LURPHWOOHWHU PCE-CMM 10

## I. Introduction

CO2 is a naturally occurring gas that emitted at great levels by human activity and it is one of several greenhouse gases in our atmosphere. CO2 only accounts for 0.03% of the fresh air. If you breathe high concentration CO2, you may be at risk of carbon dioxide intoxication. Symptoms of carbon dioxide toxicity include headache, irregular heartbeat, nausea, unconsciousness, or even death.

PCE-CMM 10 is a CO2 meter that measures CO2 concentration, temperature and humidity. This meter is widely used in homes, shopping malls, offices, vehicles, stations etc.


***Please read carefully and follow all warnings and precautions before using the device.***

## II. Open box inspection

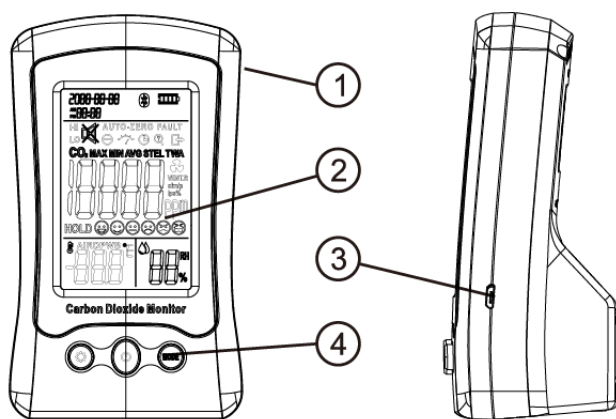
Open the box and take out the device. Please check whether the following items are deficient or damaged and contact your supplier immediately if they are.

CO2 meter	1
Protective case	1
User manual	1
USB cable	1

## III. Safety information

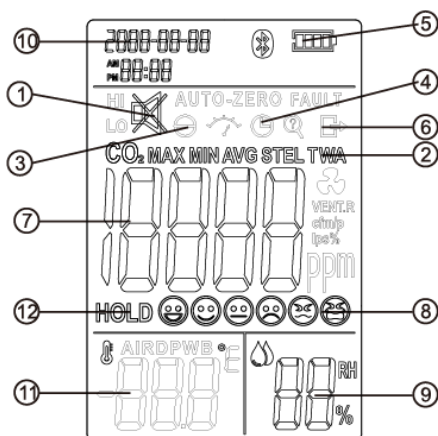
1. Check the device and its accessories for any damage or anomaly before use. Do not use the device if the cover is damaged, or has any other malfunctions.
2. Please follow the operation instructions.
3. Please do not open the device case and modify the internal circuit.
4. Do not store or use this device in high temperature, high humidity, flammable, explosive and strong electromagnetic environments.
5. Charge the meter when  symbol is displayed.
6. Regularly use soft cloth and mild detergent to clean the case. Do not use abradant or solvent.
7. Complies with CE standards.
8. This meter has ABC (Automatic Baseline Correction) function. Do not use this meter in closed environment where CO2 concentration remains relatively high.
9. Use specified adapter to charge the device. The adapter should comply with UL/FCC safety standards.

#### IV. Structure



- ① Case
- ② LCD screen
- ③ USB port
- ④ Functional buttons

#### V. Symbols



No.	Indication
1	Audio alarm ON/OFF
2	STEL/TWA/MAX/MIN/AVG modes
3	CO2 calibration
4	Timing shutdown
5	Battery status
6	Exit calibration
7	CO2 concentration
8	CO2 concentration grading emoticon
9	Relative humidity
10	Date/time
11	Temperature
12	Data hold

## VI. Operation instructions

### 1. Functional buttons





The following table shows the buttons functions in different modes.

Modes	Functions	Buttons
OFF	Long press: turn <b>on/off</b> the meter	⏻
	Long press: enter calibration mode	⚙️+⏻
Measure	Short press: turn <b>on/off</b> the <b>backlight</b>	⏻
	Short press to switch <b>temperature unit °C/°F</b>	⚙️
	Long press to turn on/off <b>audio alarm</b>	
	Short press: cycle switch between <b>HOLD/MAX/MIN/AVG/TWA/STEL</b>	MODE
	Long press: reset to zero	
	Long press: calibrate the CO2 concentration (outdoor fresh air)	⚙️ +MODE
Calibration	Short press: increase the value	⏻
	Short press : next parameter (double press to enter <b>date/time</b> calibration)	⚙️
	Long press: save	
	Short press: decrease the value	MODE
	Short press: previous parameter	⚙️ +MODE
	Long press: exit calibration	⚙️+⏻







## 2. Operations

### CO2 measurement

Long press  to turn on the meter. It takes 120s to stabilize CO2 concentration. CO2 concentration, ambient temperature, relative humidity will be displayed on the screen. CO2 concentration value is refreshed every 3 seconds.

**Note:** if CO2>1000ppm, buzzer goes off with red backlight flashing. The audio alarm's default setting is OFF, long press  to turn on the audio alarm.

#### 1) Concentration grading emoticons

	400ppm ~ 450ppm
	450ppm ~ 700ppm
	700ppm ~ 1000ppm
	1000ppm ~ 2000ppm
	2000ppm ~ 5000ppm
	>5000ppm

### Data

Short press **MODE** to cycle switch between HOLD/MAX/MIN/AVG/TWA/STEL values.

Symbol	Indication
HOLD	Data hold
MAX	Maximum value
MIN	Minimum value
AVG	Average value
TWA	Time weighted average
STEL	Short-term exposure limit

**TWA:** The average exposure within the workplace to any hazardous contaminant or agent using the baseline of an 8 hour day or 40 hours week work schedule.

**STEL:** The acceptable exposure limit to a toxic or irritant substance over a short period of time (time-weighted average), usually 15 minutes.

### Auto shutdown

The meter will automatically shut down if there is no operation for 2 hours.

### Backlight

Please refer to ***Operation Instructions-Functional Buttons***


### Audio alarm

Please refer to ***Operation Instructions-Functional Buttons***

### Temperature unit

Please refer to ***Operation Instructions-Functional Buttons***

## Battery

Charge the battery when  is displayed on the screen. It takes 2~3 hours to fully charge the battery.

## 3. Calibration

### Date/time

Please refer to **Operation Instructions-Functional Buttons** to calibrate **date/time**.

### CO2

**Note:** CO2 function has been calibrated before delivery. If the value is greatly deviated from the standard, you can calibrate it by either methods below:




#### ① Automatic calibration

*PCE-CMM 10 has the built-in self-correcting ABC (Automatic Baseline Correction) algorithm to automatically adjust the base value.*

- 1) Turn on the meter and leave PCE-CMM 10 at a place where there is flowing fresh air for 3 days (powered by the adaptor)
- 2) ABC function will automatically adjust and correct the CO2 standard value.

**Warnings:** ABC function is always on, do not use this meter in closed environment where CO2 concentration remains relatively high.

#### ② Manual calibration

- 1) Turn on the meter, leave it outdoor for 20 minutes
- 2) Long press **MODE+** until  appears on the screen. Calibration takes 10 minutes.  
 symbol disappears when calibration is done.

**Note:** It is suggested to calibrate the meter in outdoor environments where there is air flow. Keep device away from animals, plants and human.

## VII. Specifications

### 1. Technical specifications

Function	Range	Resolution	Accuracy
CO2	400~5000 ppm	1ppm	$\pm(5\% \text{ of rdg}+50\text{ppm})$ from 400~2000ppm <sup>1</sup>
Temperature	-10.0°C~50.0°C	0.1°C	$\pm 1^\circ\text{C}$
Humidity	0-99%RH	1%RH	(10%RH~90%RH) $\pm 5\%RH$ @25°C

<sup>1</sup>Measure environment: 1atm, ambient temperature and humidity

<sup>2</sup>It may be influenced by heat emitted by the adaptor

## 2. General specifications

Specifications	Descriptions
Sensor	NDIR principle
ABC	Automatic baseline correction
Audio alarm	Buzzer
Visual alarm	Red backlight
Display	LCD screen
Low battery indication	√
Auto power off	√
Backlight	√
Operating environment	0℃~50 ℃, 0%RH~85%RH
Storage environment	-20 ℃ ~60 ℃, 0%RH~95%RH
Power supply	Built-in 3.7V DC rechargeable battery
Weight	195g
Dimension	75mm x 55mm x 130mm

## 3. Adaptor

Output voltage	5VDC
Output current	1A
Safety standards	UL/FCC

## VIII. Maintenance

### ● Maintenance

1. The maintenance and service of the device must be implemented by qualified professionals or the designated departments.
2. Regularly use dry cloth to clean the case. Do not use detergent containing solvents.
3. To conserve battery, please turn off the device if not being used for a long time.

## IX. CO<sub>2</sub> concentration and effects (only for reference)

Concentration	Effect
350~450ppm	Fresh air
350~1000ppm	Normal
1000~2000ppm	Turbid air, sleepy
2000~5000ppm	Headache, irregular heartbeat, nausea
>5000ppm	Unconsciousness or even death