Calmo - Dual Power LED CO2 monitor

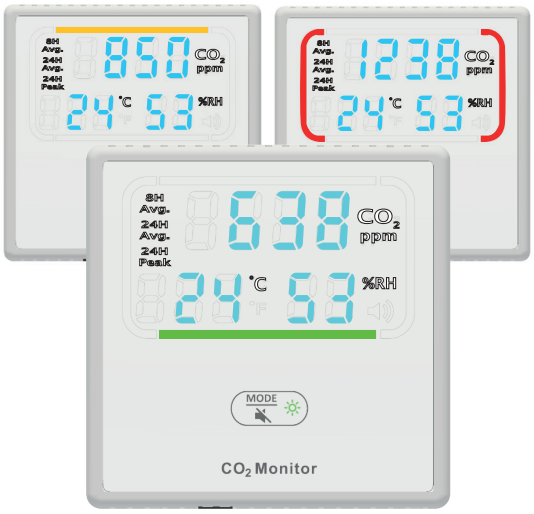
Calmo CO2 Monitor

Dual Power

LED Display

Buzzer

USB C



Features

- USB-C power or 230VAC terminal connections
- Designed to meet LVD & Scottish Technical Handbook Domestic Environment 3.14.2
- Standard fit to 35mm 35mm deep flush back box. Two-part easy assembly
- Colour LED display with 3 brightness settings
- Touch key to see 8 hour, 24 hour and peak averages
- NDIR CO2 sensor technology
- Programmable traffic light alarm levels
- Buzzer can be activated if required
- CO2 calibration options

Description

The Calmo - USB Air Quality Monitor is a great solution for monitoring and optimising indoor air quality. With a range of features and compliance. This monitor ensures a healthy and comfortable environment.

Designed to meet the requirements of LVD (Low Voltage Directive) and the Scottish Technical Handbook Domestic Environment 3.14.2, the Calmo monitor guarantees reliability in any setting. Fitting seamlessly into a standard 35mm back box, making installation hassle-free.

Equipped with a vibrant colour LED display, the Calmo monitor offers an intuitive and user-friendly interface. With a simple touch of a button, you can easily access 8-hour, 24-hour, and peak average air quality readings. Empowering you to monitor trends and make informed decisions.

Utilising NDIR (Non-Dispersive Infrared) CO2 sensor technology, the Calmo monitor ensures accurate and precise measurements of CO2 levels in parts per million (ppm), providing you with real-time data on air quality. Offering custom traffic light alarm levels, allowing personalised thresholds for CO2 levels. If desired, the built-in buzzer can be activated to provide additional audible warnings.

Specification

Power

Power Supply	100~240VAC 50~60Hz, 1.5VA or 5VDC
Power consumption	<2W

General

Dimensions	Width 86mm | Height 86mm | Depth 51mm LCD size 77mm x 46mm
Weight	150grams
Display	LED Display
Buzzer	~70db at 10cm distance
Mounting	Wall mounted (at 1.4~1.8m height)
Operating Temperature	0°C to 50°C - 0~95% RH (avoid condensation)
Storage Temperature	-20°C to 50°C - 0~95% RH (avoid condensation)
Warm up Time	< 10 seconds

Measurment Range

CO2	CO2: 0-5000 ppm
Temperature	0°C to 50°C (32°F to 122°F)
Humidity	5~95% RH

Response Time

CO2	<5 minutes (90% step change)
Temperature	<2 minutes (90% step change)
Humidity	<20 minutes (90% step change)

Accuracy

CO2	40ppm ±3% of reading (400~2000ppm) Other range is 10% of reading
Temperature	±1°C (±1°F)
Humidity	±5% RH (at 25°C 10~90%RH) ±7% RH (at 25°C, other range)

Approvals, Certifications and Guarantee

IP Rating	IP30
Housing Material	ABS
Guarantee	1 year

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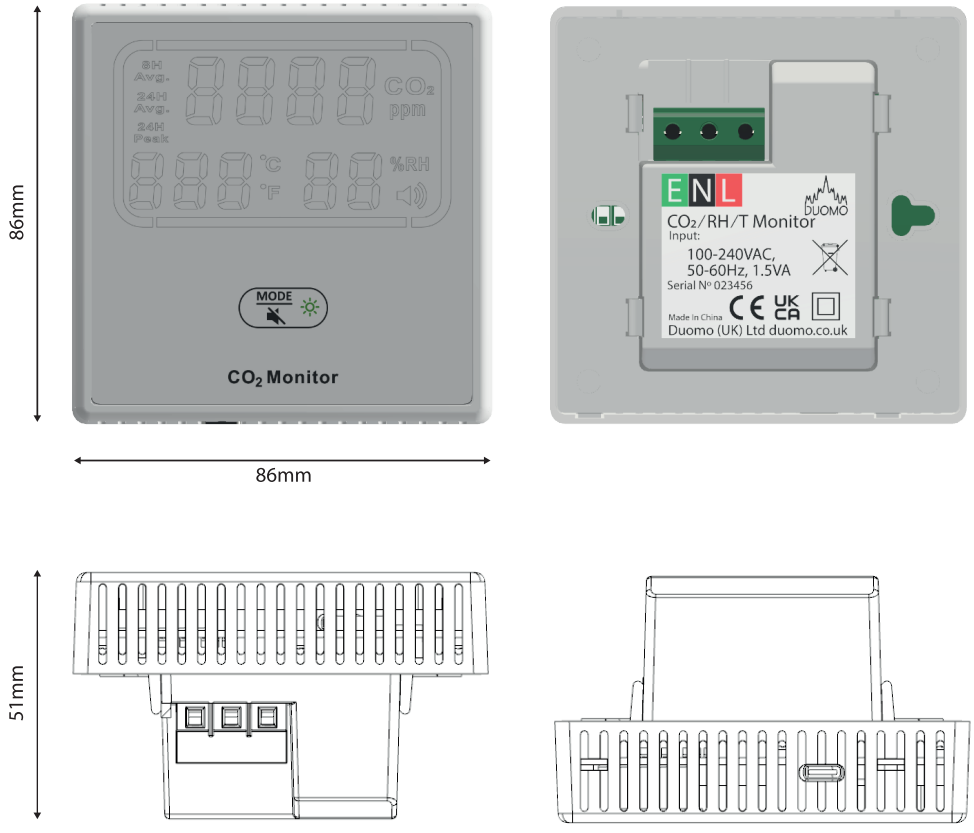
Overall Dimensions (mm)



Dip Switch Settings

Green To Yellow	DIP 2	DIP 1	Yellow To Red	DIP 3	DIP 4
600ppm	▯■	■▯	+200ppm	▯■	■▯
700ppm	▯■	▯■	+300ppm	▯■	▯■
800ppm	■▯	■▯	+400ppm	■▯	■▯
900ppm	■▯	▯■	+500ppm	■▯	▯■

Temp Unit	DIP 5	Buzzer	DIP 6	CO2 cal.	DIP 7
°F	■▯	ON	■▯	ON	■▯
°C	▯■	OFF	▯■	OFF	▯■

Operation

Indoor Air Quality Trend

By tapping MODE button, the display will cycle through the 8 hour average, 24 hour average, 24 hour peak data before returning to the current reading.

It is advisable to check data daily and take necessary actions to improve the indoor air quality. Air quality levels can vary due to many factors, regular readings should be taken.

Improve Indoor Air Quality

Opening windows and trickle ventilators increase fresh air entering the room. Trickle ventilators are adjustable and positioned to encourage ventilation through each room. To allow a flow of air through your room, at least two trickle vents should be opened by similar amounts, particularly if they are in the same room.

CO2 Light Bar Adjustments

The Calmo Green to Yellow & Red levels are adjustable to suit using the DIP Switches (page 2). If light bar color is yellow or Red, ventilation should be increased to improve air quality.

Green to Yellow: 600 to 900 ppm
Red: 200 to 500 ppm above Green to Yellow threshold

CO2 Bar	Action
Green	Normal concentration level, no action required; check monitor is working correctly.
Yellow	Ventilation required, partially or fully open trickle ventilators or leave room door partially open.
Red	Significant ventilation required, open window and leave door fully open

LCD Brightness Adjustment

If user feels the LCD brightness is too strong or weak, brightness can be adjusted. By pressing and hold MODE button to enter the brightness menu. Tap to cycle through 3 brightness options.

Press and hold MODE button again to save selection.

Buzzer ON & Mute

The buzzer is default as OFF but can be turned to ON if audible alarm is required.

See adjustments section for details and turned to ON while installing the monitor.

Short press MODE button to MUTE while buzzer beeps

Calibration Proceedure

The monitor is factory calibrated at 400ppm CO2 concentration. An auto background calibration feature is also built into the device.
Regular manual calibrations are still recommended to maintain best accuracy, following these steps:

1. Remove Calmo from wall. Leave the in a known 400ppm CO2 condition for 5 minutes.
2. Set Dip switch 7 to ON position. Power up the monitor using USB type C cable.
3. After a 300 second count down, "SA" is shown on the display indicating calibration is complete. CO2 value should be between 370~430ppm.
4. Remove the USB power supply and push the Dip switch 7 to OFF position.
5. Install Calmo back onto 35mm back box

CAUTION: Do not calibrate the Calmo in the air with unknown CO2 level. Otherwise, it will be taken as 400 ppm and leads to inaccurate measurement. The manual calibration is recommended to be done outdoors with good ventilation, fresh air and on a sunny day. Do not calibrate in rainy day because high humidity will affect the CO2 level in air. Do not calibrate in crowded places or near ventilating outlets or fireplaces.

Hard Wire the Calmo

Safety Instructions

- Switch off the electrical supply before commencing installation.
- This product must be connected to an accessible switched connection unit fitted with a 5A fuse.
- This product must be installed in a 35mm 1g back box manufactured to EN 60670-1.
- All products must be installed/wired by a competent and qualified person in accordance with all relevant regulations and legislation.
- If this equipment is used in a manner not specified by the manufacturer, protection provided by the equipment may be impaired.

Mounting Location

This IAQ device can be installed in rooms that are continuously occupied enclosed spaces, such as bedrooms, classrooms...etc.

1. Mounting height is 1.4 to 1.6m.
2. Mounting position must be easily visible and easily accessible.
3. This device can't be positioned in 'dead air space', such as within 150mm of the ceiling or an adjacent wall, or where it can be obstructed by furniture or furnishings. It should not be positioned next to a door, window, air vent or within 1m of a potential headboard location.
4. This monitor is designed for indoor use under standard atmospheric conditions.

Installation

1. Using a flat screwdriver, press in the two securing clips at the bottom of the monitoring housing , whilst easing it away from the mounting plate from the bottom, whilst protecting the monitor housing from damage.
2. This device must be connected to switched connection unit fitted with a 5A fuse that is accessible by the user.
3. Adjust the setting if required (see page 2) The cable used for installation should be solid core with a cross sectional area greater than 1mm2.
4. Terminate the mains supply cables into the terminals in the mounting plate: L permanent live | N neutral | E earth

Data Serial Port

The USB type C port offers power input and data output features allowing real time measured data to computer.

To activate the data output feature, please contact Duomo for a specially made USB bridge cable allowing computer connection.

Error Codes

Error Code	Problem & Solution
E1	CO2 sensor is damaged - Send back to repair
E2	Measured reading is under the lower limit - For CO2 E2: Re-calibrate. - For other E2: leave meter in room condition for 30 mins.
E3	Measured reading is above the upper limit - For CO2 E3: put the meter in fresh air for 5 mins. - For other E3: leave meter in room condition for 30 mins.
Fail	Fail To indicate the calibration is fail - Put meter in fresh and stable Co2 condition for calibration

DUOMO
GAS SAFETY CONTROLS

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