

11.5 cm

– 2.3 cm –

## Description

MClimate CO2 Display LoRaWAN is a stand-alone CO2 sensor powered entirely by solar energy using an organic solar panel. The device features a 2.9" e-ink screen, sensor for movement (PIR), temperature and humidity sensor, LUX sensor and NDIR CO2 sensor. The user can see the current levels of CO2 as well as historical trend. The device sends an uplink when it detects movement as well as periodically. The data from the CO2 Display can be used in any LoRaWANcompatible system, incl. Building Management Systems to control demand-based ventilation. Sensor information can be exposed as datapoints in Modbus, BACnet and KNX systems through the use of a special gateway.

SKU: MC-LW-CO2-E-INK-01

## Device specifications

### Mechanical specifications

WEIGHT EXCL. BATTERIES	170gr
DIMENSIONS	105mm X 115mm X 23mm
ENCLOSURE	ABS, Stainless steel, tampered glass
MOUNTING OPTIONS	Screws and dowels or double-sided tape; Anti-theft bracket with secure screw

### Operating conditions

TEMPERATURE	0° - +50°C
HUMIDITY	0-80% RH (non-condensing)

### Power supply

POWER SUPPLY	Solar-powered Lithium-ion capacitor (LIC) AND/OR 4xAA 1.5VDC batteries AND/OR USB-C
OPERATING VOLTAGE	2.5-3.8VDC powered by Solar Panel, 2-3.6VDC powered by batteries, 5VDC powered from USB-C
EXPECTED BATTERY LIFE	Indefinite powered by solar, 10+ years powered by AA batteries (depending on configuration and environment)
EXPECTED BATTERY LIFE IN THE DARK	14 days

## Product features

- Solar-powered & battery free
- PIR sensor
- LUX sensor
- 2.9" e-ink display
- Temperature and Humidity sensor
- NDIR CO2 sensor
- Anti-theft bracket
- FUOTA

## Applications

- Smart Buildings
- Residential buildings
- Commercial buildings
- Hotels

## Radio/Wireless

WIRELESS TECHNOLOGY	LoRaWAN® 1.0.3
WIRELESS SECURITY	LoRaWAN® End-to-End encryption (AES-CTR)
LORAWAN DEVICE TYPE	Class A End-device
SUPPORTED LORAWAN FEATURES	OTAA, ADR, Adaptive Channels setup
SUPPORTED LORAWAN REGIONS	EU863 – 870; Other LoRaWAN regional settings available upon request
LINK BUDGET	130dB
RF TRANSMIT POWER	14dB

## Sensors

### CO2

ACCURACY	±(30ppm +3% of reading)
RANGE	0-5000ppm

### Temperature

RESOLUTION	0,1° C
ACCURACY	±0,2 - ±0,7° C

### Humidity

RESOLUTION	±2
ACCURACY	±3% r.H.

### PIR

VIEW OF ANGLE	X=100° ; Y = 90°
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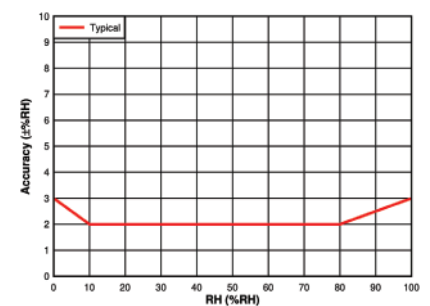
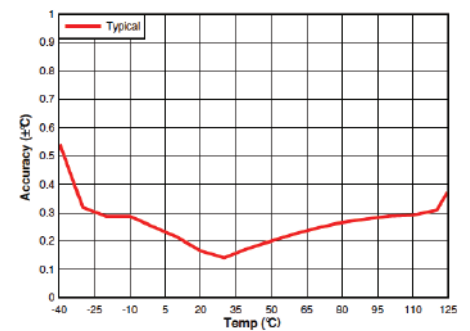
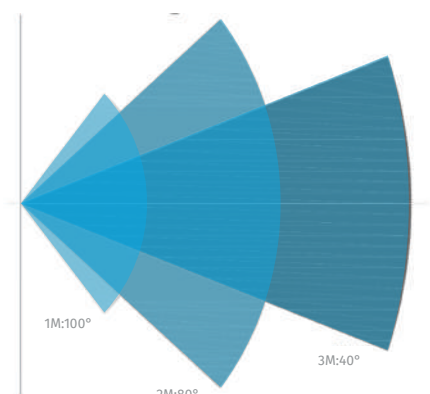


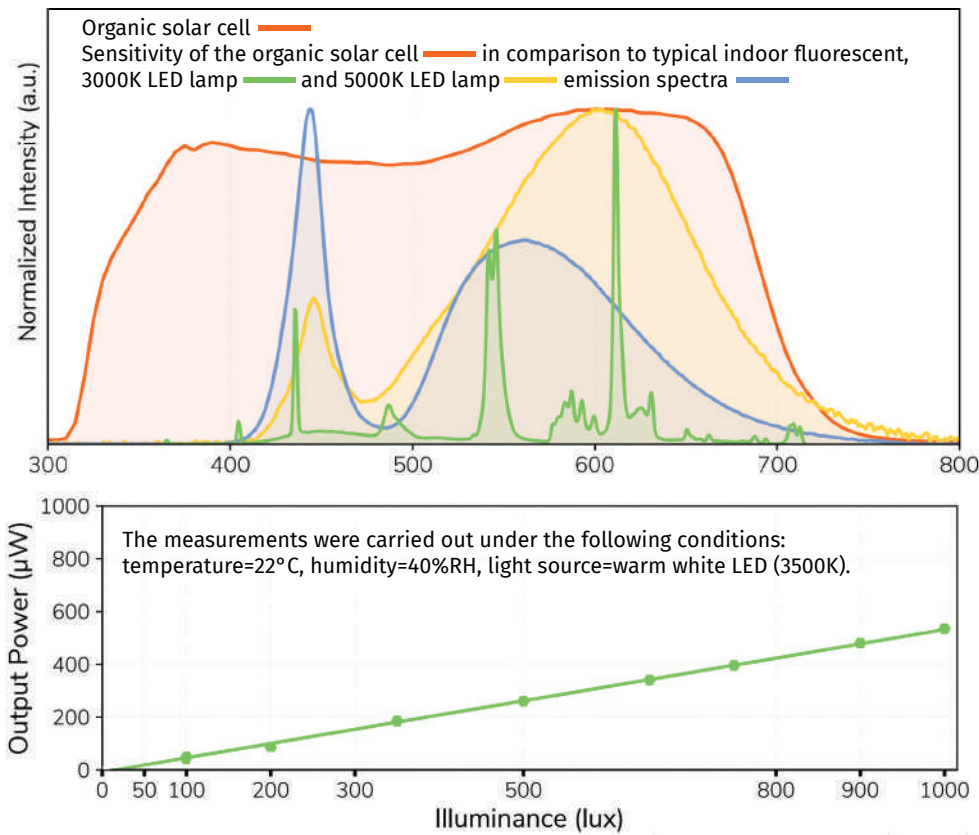
Figure 6-1. RH Accuracy vs. RH



## LUX

RESOLUTION	1 LUX
ACCURACY	±10%
RANGE	0-10,000 LUX

## Organic Solar Cell



**Warnings:**  
 Do not place the device in direct sunlight, as this will result in gradual worsening of the performance of the solar panel. A few hours a day in direct sunlight wouldn't be an issue.

