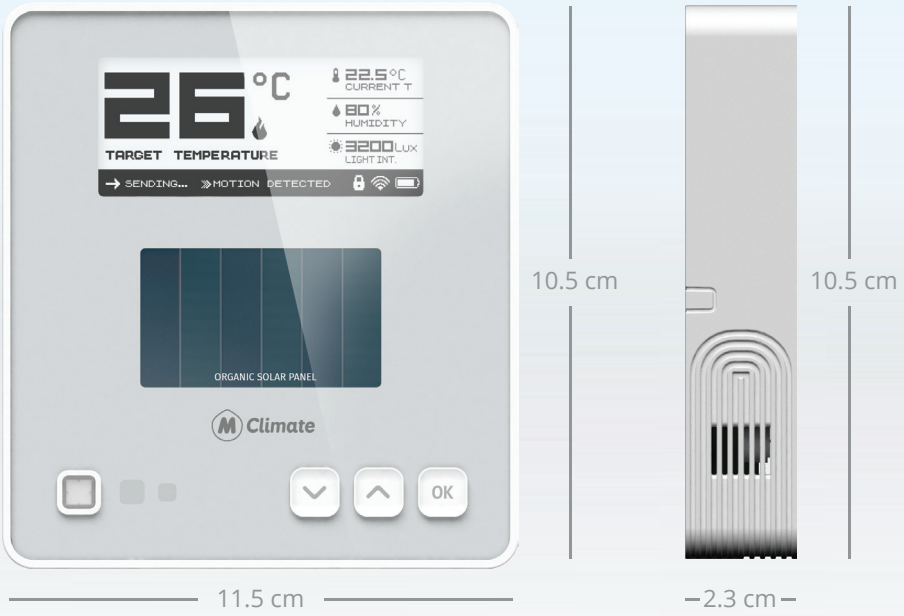
Wireless Thermostat

by MClimate

LoRaWAN



Powered by Organic Solar Panel

Description

MClimate Wireless Thermostat is a stand-alone thermostat 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 3 buttons. The user can change the target temperature and see current indoor conditions. The device sends an uplink after any event as well as periodically. The data from the Wireless Thermostat can be used in any LoRaWAN-compatible system, incl. Building Management Systems to control different appliances in the building.

SKU: **MC-LW-WT-01**

Product features

- Solar-powered & battery free
- PIR sensor
- LUX sensor
- E-ink display
- RGB LED
- Temperature & humitity sensor
- 3 buttons
- Anti-theft bracket
- FUOTA
- Child lock
- Sensing only mode (no target temp displayed)

Applications

- Smart Buildings
- Smart home
- Residential buildings
- Commercial buildings
- Hotels

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	21 days

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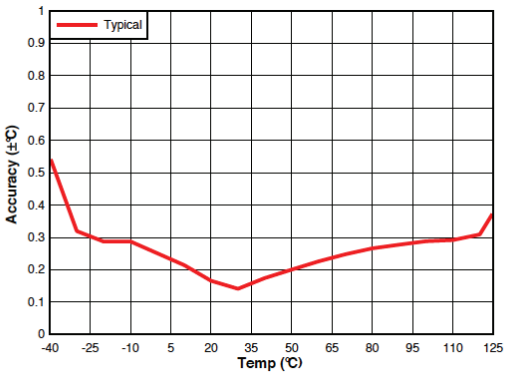
Radio/Wireless

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

Temperature

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



Humidity

RESOLUTION	±2
ACCURACY	±3% r.H.

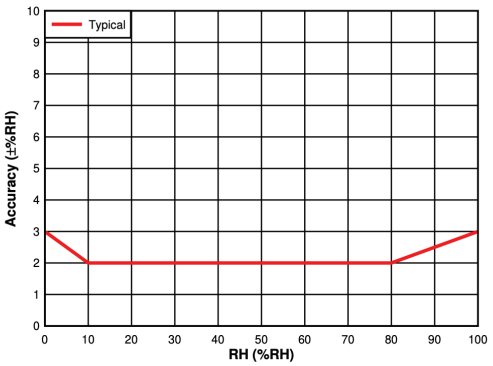
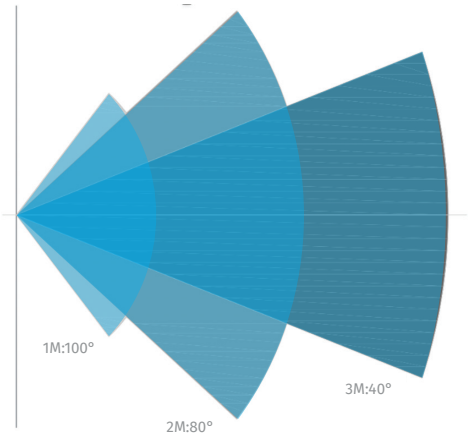


Figure 6-1. RH Accuracy vs. RH

PIR

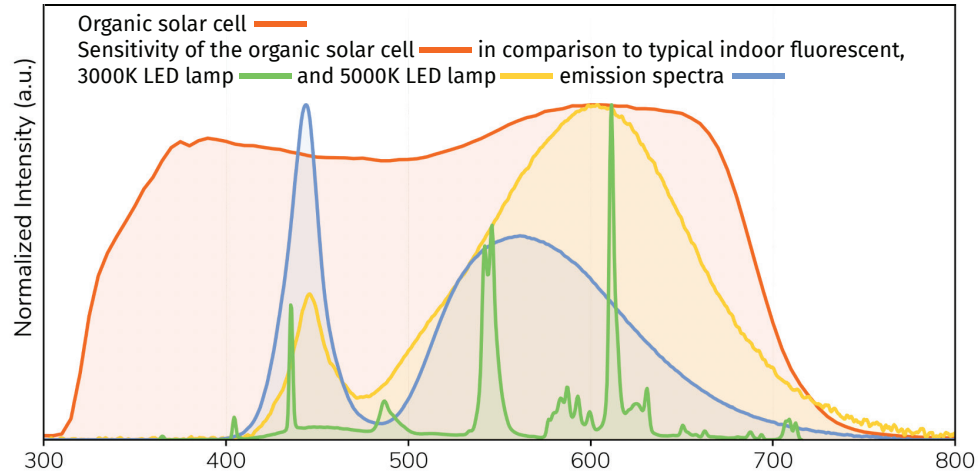
VIEW OF ANGLE	X=100° ; Y = 90°

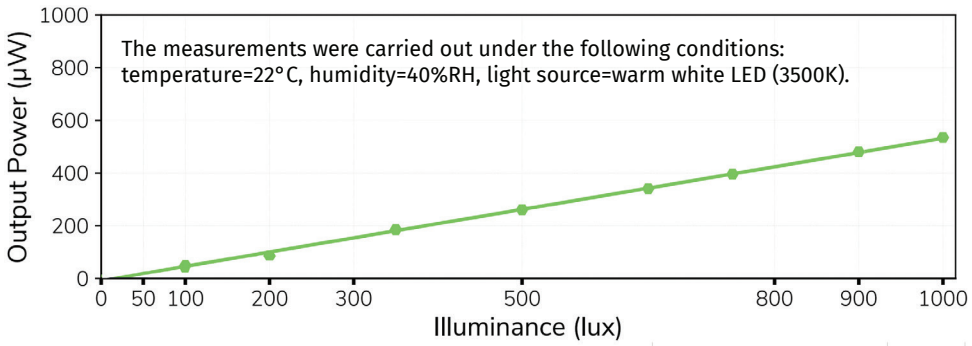


LUX

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

Organic Solar Cell





Warnings:
Do not expose to direct sunlight! Will damage the indoor organic solar cell.
Do not install near airvents, etc.