

# Modular Room Monitors

## RoomSense IQ/ClimateSense Pro

### Product Overview

01/20/2025

For the most up-to-date information, visit [www.mouser.com](http://www.mouser.com) or the supplier's website.

### Description

RoomSense Labs Modular Room Monitors are room monitors for presence-based home automation. The ClimateSense Pro hardware expansion module integrates seamlessly with RoomSense IQ to monitor indoor climate conditions like temperature, humidity, CO<sub>2</sub> levels, and smoke indicators.



The ClimateSense Pro provides actionable insights to help keep living and working spaces healthy, comfortable, and productive. This device monitors temperature, humidity, dew point, and crucial contaminants such as airborne chemicals (TVOC), carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), dust, and smoke. It allows the intelligent control of purification, humidification, and ventilation systems to reduce energy consumption while enhancing comfort and safety.

The RoomSense IQ features a built-in ESP32-S3 SoC that supports Wi-Fi™ connectivity and enables seamless integration with existing IoT networks, facilitating real-time data transmission and remote monitoring. The device incorporates mmWave radar to detect presence and movement and a Passive Infrared (PIR) sensor to filter out non-human activities. The built-in light sensor automatically adjusts lighting conditions to optimize energy consumption. The multi-purpose RGB LED provides at-a-glance status information and USB Type-C™ interface draws power and handles serial communication.

### Features

- RoomSense IQ:
  - Web-based dashboard interface for baseline calibration and movement classification
  - Home Assistant integration via MQTT over Wi-Fi
  - Compatible with Amazon Alexa, Apple HomeKit, and Google Home through IFTTT
  - Distance-based zone detection and blacklisting
  - Movement classifier with a refresh rate of 25Hz
  - Baseline calibration for false-alarm management

- Pet-friendly calibration
- Realtime and trend values
- Support for Over-The-Air (OTA) firmware updates
- Configurable IP addresses and MQTT port
- SP32-S3 SoC with Wi-Fi connectivity
- Multi-purpose RGB LED
- USB Type-C™ for power and serial communication
- Thermally isolated enclosures for optimal sensor accuracy
- A ball-mount enclosure design that allows to orient sensors in any direction
- 80mA at 5V power consumption
- 5.5cm x 5.5cm board dimension
- ClimateSense Pro:
  - Seamless integration with RoomSense IQ
  - Continuous indoor climate monitoring – tracks critical indoor environmental parameters in real-time
  - CO<sub>2</sub> monitoring – measures CO<sub>2</sub> levels to ensure air quality for better productivity and sleep
  - Smoke and fire detection – monitors for potential fire hazards, improving home safety
  - Air quality measurement – detects dust and airborne chemicals that may trigger asthma or allergies
  - Up to 10 airborne parameters – provides comprehensive monitoring of various air quality factors such as humidity, Volatile Organic Compounds (VOCs), and temperature
  - Prevention of mold growth – helps maintain a healthy environment by optimizing climate control to reduce mold risks
  - Access via home assistant – parameters can be viewed and managed easily through your home assistant web application
  - Heating and cooling system integration – automates AC, heat pumps, and baseboard heaters based on air quality data
  - Alarms and emergency contact systems – trigger alarms and alert emergency contacts during hazardous conditions like smoke detection
  - Control of garage doors – can automatically manage garage door ventilation based on air quality
  - Air purifier automation – adjusts air purifiers according to detected pollution or dust levels.
  - Fan and ventilation system automation – optimizes indoor ventilation to maintain fresh air circulation
  - Window automation – automatically opens or closes windows depending on indoor air quality or vclimate conditions

## Kit Contents

- RoomSense IQ:
  - LD2410 - 24GHz mmWave radar with a sensing distance of up to six meters with a 110° FoV
  - EKMC2601111K - PIR sensor to filter out non-human activities and reduce false alarms
  - Photocell - light sensor for smart lighting control
- ClimateSense Pro:
  - MPM10CD - Laser particulate matter sensor
  - SCD40-D-R2 - Photoacoustic NDIR sensor
  - TGS5141 - Electrochemical carbon monoxide sensor
  - SGP40-D-R4 - Indoor air quality sensor for VOC measurements
  - SHT21 - Humidity and temperature sensor



RoomSense IQ

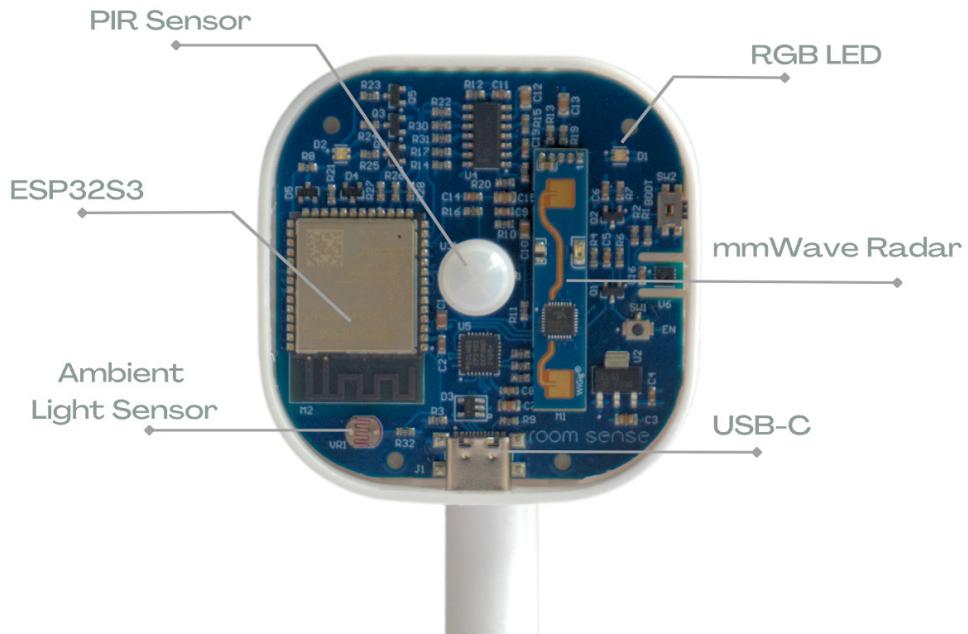


ClimateSense Pro

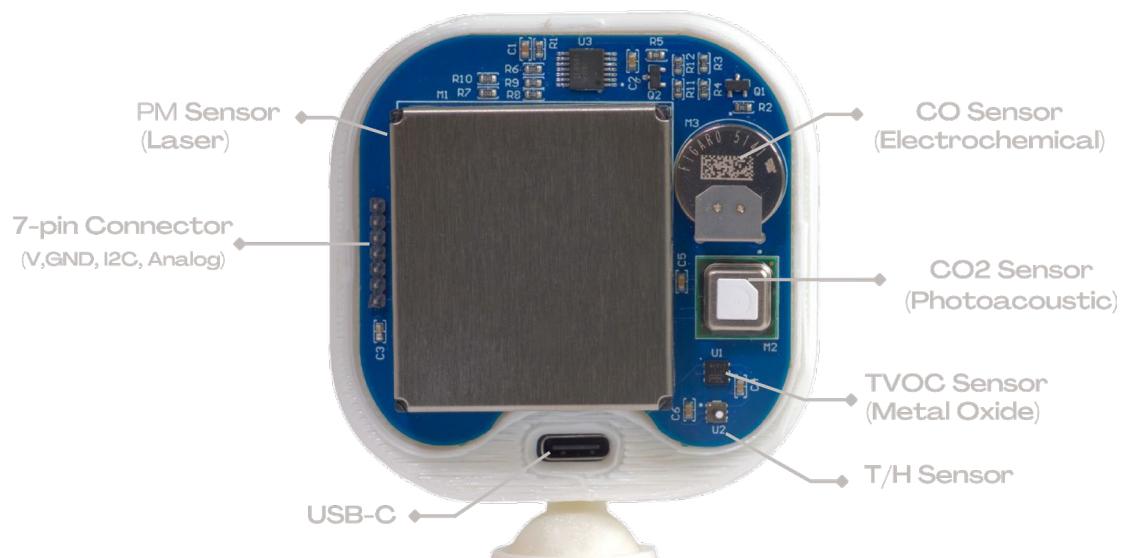
## Applications

- Home automation
- Prevention of harmful airborne chemicals
- IoT devices

## RoomSense IQ Overview



## ClimateSense Pro Overview



## Launched On

### CROWD SUPPLY

RoomSense IQ launched on Crowd Supply  
in November 2023

## Mouser Part Numbers

- [View CLIMATESENSE-PRO](#)
- [View ROOMSENSE-IQ](#)

To learn more, visits:

<https://www.mouser.com/new/roomsense-labs/roomsenselabs-roomsense-iq-monitor/>  
<https://www.mouser.com/new/roomsense-labs/roomsenselabs-climatesense-pro-module/>