

### Applications

- Building Air Quality
- HVAC Systems
- Count Indoor Human Occupancy
- Office Buildings
- Schools
- Horticulture and Greenhouses

### What Sets RLE Sensors Apart?

- A single sensor monitors CO2, temperature, and humidity
- CO2 module is self-calibrating, zero maintenance, has excellent accuracy and range, and a 15 year CO2 sensor life expectancy
- Wireless and battery powered
- Industry leading battery life
- Designed with security in mind, the sensors allow only one-way communications
- WIFI-CO2 sensors:
  - Communicate via an existing Wi-Fi network
  - Support WPA/WPA2-PSK encryption
  - Have encrypted data storage for network and configuration data
  - Data can transmit to a BMS using an existing wireless network

### Why Should You Monitor Carbon Dioxide (CO2)?

CO2 has emerged as an important air quality metric, and RLE has added WiNG and Wi-Fi versions of a sensor that monitors CO2, temperature, and humidity. But why do we monitor CO2?

### People Are More Productive In Spaces With Lower CO2



CO2 readings can be used to identify poorly ventilated spaces and track changes in air circulation. Increased levels of CO2 leave building occupants feeling tired and sluggish; if you've ever felt sleepy in a conference room, you've likely experienced the effects of CO2 build up. Our testing in office spaces proved small changes, like opening an outside door to let in fresh air, caused the CO2 readings observed by our sensors to plummet, and people felt refreshed. Our customers also use CO2 sensors to monitor air handling equipment and quickly detect impeded airflow, stalled fans, leaks, blockages, and clogged filters.


### Plants Both Grow And Produce More With Higher CO2




At the other end of the CO2 spectrum, studies prove plants thrive in CO2-rich environments. A boost in daytime CO2 levels increases growth and production by as much as 40%. But there's a fine line here as well; too much CO2 can exhaust plants, resulting in fewer and smaller buds. CO2 must work in harmony with balanced temperature, humidity, and light levels<sup>1</sup>, so the three readings documented by RLE's CO2 sensors, as well as the accuracy and range of the sensor itself, provide a significant advantage to horticulturalists.

<sup>1</sup><https://www.questclimate.com/carbon-dioxide-and-better-indoor-harvests/>

### WiNG-CO2 Technical Specifications

Power	7.2V (two 3.6V AA lithium batteries)	
Battery Life	Up to 5 years at room temperature and at default transmission rate	
Shelf Life	10 years in quiescent mode with battery installed	
Transmission Interval	10-20 seconds (random)	
Frequency Range	Available in 868MHz and 900MHz configurations	
Range	Up to 600ft line of sight	
CO2 Sensor Range	0-2000 PPM	
Accuracy	+/- 30 PPM plus 3% of reading	
Measurement Interval	Every two minutes (default); Configurable 1-15 minutes	
Temperature Sensor Accuracy At Room Temperature	Typical +/- 0.2°C; Max +/- 0.4°C; Room temperature is specified as 32°F to 140°F (0°C to 60°C)	
Accuracy Over Full Operating Range	Typical +/- 0.6°C; Max +/- 1.0°C	
Measurement Interval	10-20 seconds (random)	
Humidity Sensor Accuracy Over Standard Operating Range	Typical 2%; Max 3.5%; Standard operating range is specified as 20% to 80% RH (Non-condensing)	
Accuracy Over Full Operating Range	Typical 3.5%; Max 6%	
Measurement Interval	10-20 seconds (random)	
Operating Environment Temperature	32°F to 122°F (0°C to 50°C)	
Humidity	0% to 90% RH (Non-condensing)	
Altitude	-200ft to 15,000ft (-70m to 4572m) max.	
Mounting	Free standing, zip ties, screw and keyhole - spaced 2.5" (6.4cm), junction box - 2 screws spaced 3.28" (8.3cm)	
Dimensions and Weight	4.4"L x 2.5"W x 1.5"H (11.2cmL x 6.4cmW x 3.8cmH), 0.2lb (0.10kg)	
Certifications and Standards	CE UL61010, CSA 22.2 #61010, IEC 61326-1, FCC 47CFR 15B, IC ICES-003, EN 61000-3-2, EN61000-3-3, ETSI EN 301 489-1, ETSI EN 301 489-3; FCC ID: X7J-A11072401; IC: 8975A-A11072401	

### WiFi-CO2 Technical Specifications

Power	7.2V (two 3.6V AA lithium batteries)	
Battery Life IPv4	Battery life varies based on Wi-Fi signal strength and access point performance	
IPv6	Up to 5 yrs at 5 minute transmission intervals; up to 2 yrs at 2 minute transmission intervals	
IPv6	Up to 5 years at 15 minute transmission intervals	
Shelf Life	10 years in quiescent mode with battery installed	
Connectivity Wi-Fi	2.4 Ghz 802.11b/g/n, supports WEP, WPA (TKIP) or WPA2 (AES) encryption	
IP	IPv4 static or DHCP; IPv6 static	
Transmission Interval	1-30 minutes (configurable)	
CO2 Sensor Range	0-2000 PPM	
Accuracy	+/- 30 PPM plus 3% of reading	
Temperature Sensor Accuracy At Room Temperature	Typical +/- 0.2°C; Max +/- 0.4°C; Room temperature is specified as 32°F to 140°F (0°C to 60°C)	
Accuracy Over Full Operating Range	Typical +/- 0.6°C; Max +/- 1.0°C	
Humidity Sensor Accuracy Over Standard Operating Range	Typical 2%; Max 3.5%; Standard operating range is specified as 20% to 80% RH (Non-condensing)	
Accuracy Over Full Operating Range	Typical 3.5%; Max 6%	
Operating Environment Temperature	-13°F to 185°F (-25°C - 85°C)	
Humidity	0% to 90% RH (Non-condensing)	
Altitude	-200ft to 15,000ft (-70m to 4572m) max.	
Mounting	Free standing, zip ties, screw and keyhole - spaced 2.5" (6.4cm), junction box - 2 screws spaced 3.28" (8.3cm)	
Dimensions and Weight	4.4"L x 2.5"W x 1.5"H (11.2cmL x 6.4cmW x 3.8cmH), 0.2lb (0.10kg)	
Certifications and Standards	EN-61326-1:2013, EN 301 489-1 V2.1.1, EN 301 489-17 V 3.1.1, Subpart B of Part 15 of FCC Rules for Class A digital devices, ANSI/UL 61010-1:2012, CAN/CSA-C22.2 No. 61010-1:2012 (3rd Edition), EN 61010-1:2010 (3rd Edition), and IEC 61010-1:2010. Contains FCC ID: Z64-CC3220MOD or Z64-CC3235MOD; Contains IC/ISED: 4511-CC3220MOD or 4511-CC3235MOD; Contains MIC: 201-170386 or 201-190033	

