

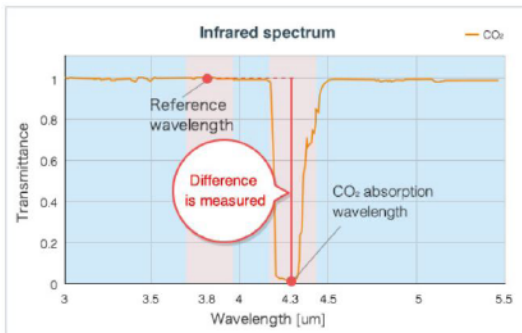
BENEFITS OF A DUAL BEAM SENSOR - TT-CO2001

The dual beam sensor uses 2 light sensors in the the detection chamber; one senses the IR (infrared) wavelength that is absorbed by CO₂ and one that senses the visible light from the source. This second sensor is used to track the strength of the light source as it deteriorates over time and make adjustments for it.

Benefits

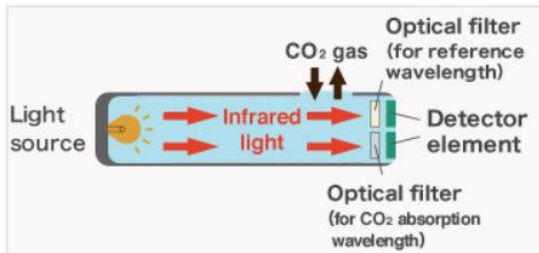
1. It allows for higher ppm detection (up to 20,000 ppm).
2. It allows for use in areas where the background level of CO₂ does not fall to outside levels (which is required for the auto-cal function of the single-beam sensor).

NOTE: The dual beam sensor is requires calibration more often than the single beam (ideally a verification once per year and adjustment as required).



The sensor in the CO₂ line of products uses dual-beam infrared wavelength technology to provide accurate CO₂ measurements.

The sensor measures infrared light intensity at the reference wavelength and CO₂ absorption wavelength simultaneously, and calculates CO₂ concentrations from the difference between light intensities at the CO₂ absorption wavelength and the reference wavelength, resulting in accurate and stable measurement of CO₂ gas concentrations.



The sensor employs a single light source, dual wavelength system using two optical filters and measures intensities of the infrared lights at two different wavelength bands passing through each of the optical filters respectively, resulting in accurate measurement of CO₂ gas concentrations. Furthermore, stable sensor output throughout a long period of operation is achieved by proprietary signal processing technology. High accuracy is maintained by comparing IR intensities of two different wavelength bands even when used in applications where people are continually present, such as small retail stores or hospitals.