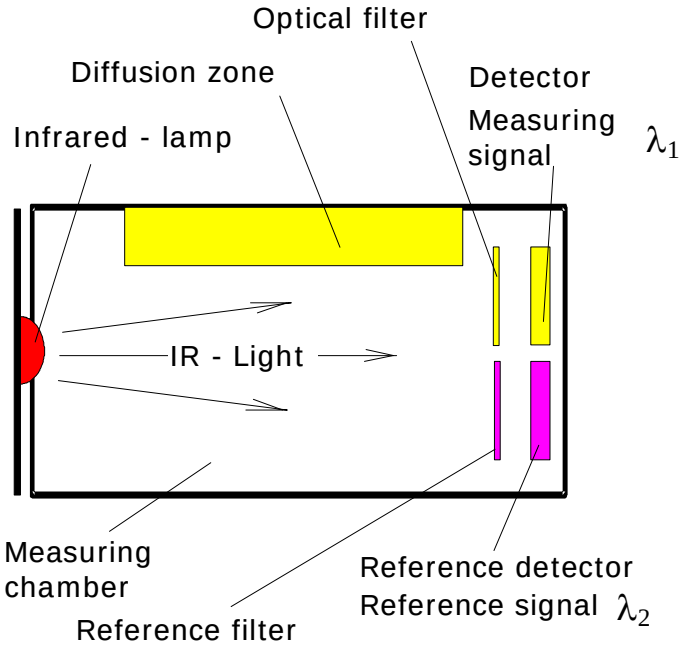
ARTICLE

Detection principle Infrared (IR)

The infrared measurement principle utilizes the characteristic of gas to absorb light in some defined wavelength ranges (bands). Heteroatomic gases such as CO_2, CH_4, NO_2, and C_2H_2 can be measured with infrared sensors.



A lamp or a heated wire emits infrared light. This light passes through the gas, which absorbs some of the light, causing a loss in intensity. The absorption of a small wavelength range is proportional to the gas concentration. The loss of intensity is measured by sensors. At the same time, the reduction in intensity of other wavelengths (where no absorption of the gas took place) is measured. This second measurement is used as a reference signal.

The accuracy of the measurement can be retained even if the intensity of the infrared lamp changes or a mirror is dirty. The infrared sensor can be used in inert atmospheres and when there are very high gas concentrations.

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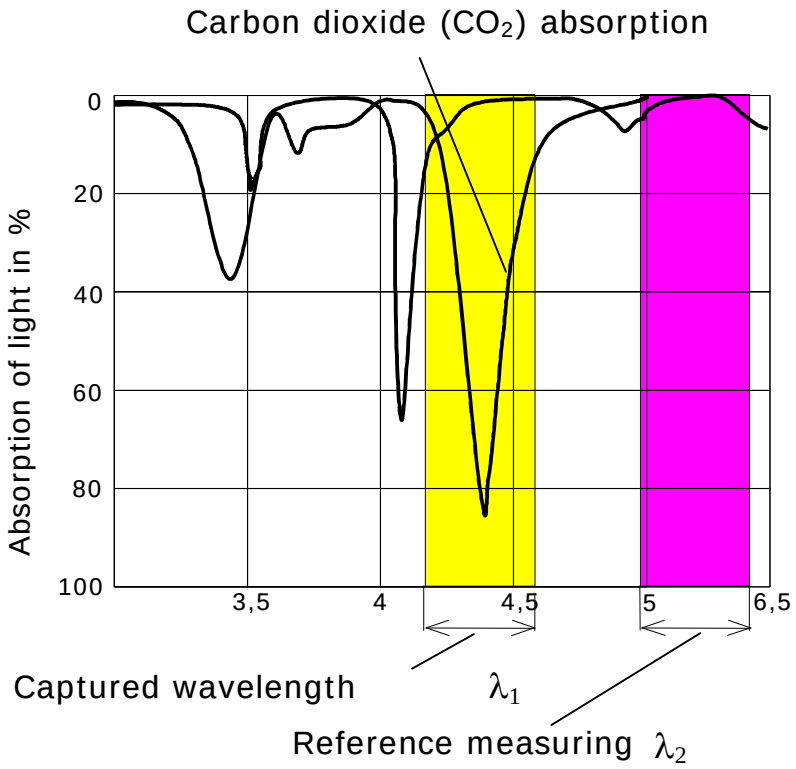
The infrared method can be used in the presence of catalytic poisons; for example, silicone, sulfur compounds, freon, halogen, and lead combinations.



Further advantages

- High selectivity
- Extremely accurate measurements in both low and high gas concentrations
- Highly resistant to catalytic poisons
- Good long-term stability

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