Detectable gases
## for NDIR gas analysis

Using NDIR gas analysis, various gases[1] can reliably be detected from the ppm to the percentage range.

The analytical method is particularly suitable in medicine for respiratory gas analysis, in the automotive industry for exhaust gas measurements, for the control of process gases, gas leak detection and chemical applications. The gas whose concentration is to be measured is irradiated with an IR pulse source. By means of an IR detector, the attenuation of the IR radiation due to the specific absorption is detected. From this the gas concentration can be determined.

Lattice	Formula
Carbon dioxide	CO_2
Water	H_2O
Propane	C_3H_8
Methane	CH_4
Carbon monoxide	CO
Nitrogen monoxide	NO
Sulfur dioxide	SO_2
Dinitrogen monoxide	N_2O
Sulfur–hexaflouride	SF_6
Ammonia	NH_3
Ethanol	C_2H_5OH
Trichlorofluoromethane	CCL_3F
Acetone	C_3H_6O
Halothane	$C_2HBRCLF_3$
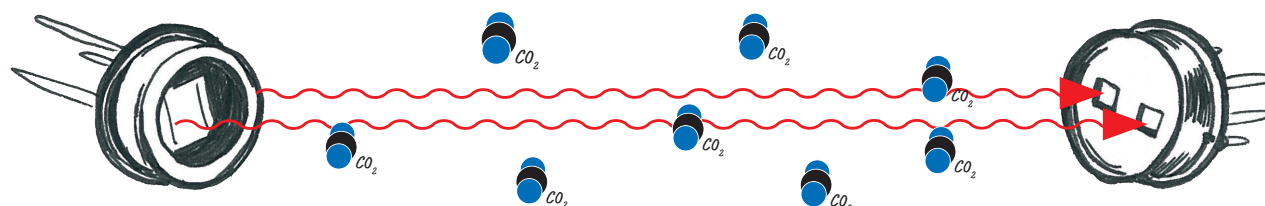
[1] Any gas is NDIR detectable that changes its dipole moment by infrared radiation. This change of the dipole moment is caused by vibrations of atoms in the molecules or by vibrations of groups of atoms (e.g.: OH-group by ethanol) in the molecules.

Scheme NDIR gas analysis

GAS SENSORS