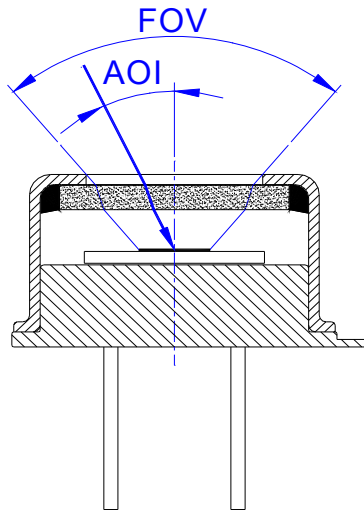

Description

5 Field of View (FOV)

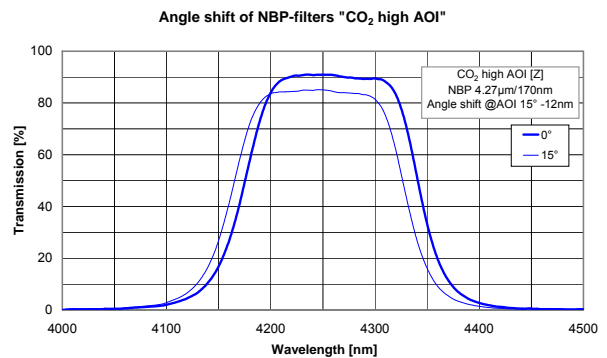
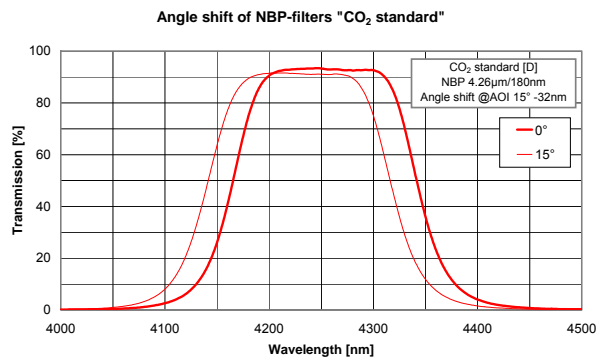
A detector's Field of View (FOV) should be optimally chosen and specified in order to maximize useful incident radiation but also to minimize background or unwanted radiation. In other words, the FOV of a detector should be specified as large as necessary only to admit the maximum amount of useful radiation based on specific system characteristics and requirements.

A wide Angle of Incidence (AOI) shall be avoided for applications with narrow-band IR filters (typical for NDIR gas analysis). In this case the physical conditioned shift of cut-on and cut-off of the narrow-band IR filter will move towards shorter wavelengths and will modify the desired spectral characteristics of the detector.



Therefore InfraTec offers special IR filter types with extreme low angle shift of approximately -15 nm at 15° AOI ('CO' [I], 'CO₂ high AOI' [Z], 'CO₂ narrow' [T], 'Flame' [F], 'Methane' [C] and 'SO₂' [U]). A higher temperature drift of the CWL (approx. $+0.5$ nm/K) will arise as a matter of principle for these six filters.

Furthermore please note that multi channel detectors with AOI larger than ± 15 degrees might cause interference problems between channels (cross over).



Description

In the following table FOV's for some of our standard detectors are listed. Additionally this information is given under the line 'Field of View' in every detector datasheet:

Group	Type	FOV for different window substrates		
		Minimum value for every point of the sensitive element		
		Calcium or Barium fluoride 0.4mm thick	Silicon substrate 0.5mm thick	Silicon substrate 1.0mm thick
Standard Products	LIE-216	40°	45°	55°
	LIE-235	95°	100°	125°
	LIE-316	65°	70°	80°
	LME-345	80°	90°	110°
	LME-541	60°	65°	85°
Extended Products	LIE-312	95°	-	-
	LIE-332	90°	-	-
Multi Color Products	LIM-011	not applicable	Maximum angle of incidence shall be $\pm 7^\circ$ otherwise internal reflexions may modify the channel ratio!	
	LIM-032	not applicable		
	LIM-054	not applicable		
	LIM-212	not applicable	45°	60°
	LIM-214	not applicable	40°	50°
	LIM-222	not applicable	20°	25°
	LIM-262	not applicable	30°	35°
	LMM-244	not applicable	50°	65°