

# CCTV Camera Lens Guide

This chart is intended as an approximate guideline to help you select the appropriate lens.

Due to the physical nature of lens optics, the numbers listed below should be considered accurate to within  $\pm 3^\circ$  and therefore a few feet / meters as well. While each camera in fact has its own unique field of view with each specific lens. In addition, C- and CS-mount lenses typically deliver a slightly narrower field of view than our comparable board lenses.

Lenses wider than roughly 5mm produce "artificially" wider fields of view than most telephoto lenses. In order to do so, the video image is slightly curved at the edges of the screen. While this artificial distortion is nominal for focal lengths between 4.3 and 3.6mm, curvature increases with wider angle lenses. Also, most 1/4" CCD cameras produce a significantly narrower field of view with the same focal length lens.

Lens Size Comparison Chart															
Lens Size	Viewing Angle			Distance to Object / Size of Picture (Width x Height)											
	Horiz. °	Vert. °	Diag. °	5 ft.		10 ft.		15 ft.		25 ft.		50 ft.		100 ft.	
2.8mm	109°	82°	136°	14.0'	10.5'	28.0'	21.0'	42.0'	31.5'	70.0'	52.5'	140'	105'	280'	210'
3.6mm	74°	56°	92°	7.5'	5.7'	15.0'	11.4'	22.5'	17.1'	37.5'	28.5'	75'	57'	150'	114'
4.0mm	67°	50°	83°	6.6'	5.0'	13.2'	10.0'	19.8'	15.0'	33.0'	25.0'	66'	50'	146'	110'
6.0mm	42°	32°	53°	3.8'	2.9'	7.6'	5.8'	11.4'	8.7'	19.0'	14.5'	38'	29'	76'	58'
8.0mm	32°	24°	40°	2.9'	2.2'	5.8'	4.4'	8.7'	6.6'	14.5'	11.0'	29'	22'	58'	44'
12mm	22°	16°	28°	1.9'	1.5'	3.8'	2.8'	5.7'	4.5'	9.5'	7.5'	19'	15'	38'	28'
16mm	16°	12°	21°	1.4'	1.1'	2.8'	2.2'	4.2'	3.3'	7.0'	5.5'	14'	11'	28'	22'
25mm	11°	8.4°	14°	1.0'	0.7'	2.0'	1.4'	3.0'	2.1'	5.0'	3.5'	10.0'	7.0'	20.0'	14.0'
50mm	5.5°	4.2°	7°	0.4'	0.3'	0.8'	0.6'	1.2'	0.9'	2.0'	1.5'	4.0'	3.0'	8.0'	6.0'
75mm	3.6°	2.8°	4.6°	0.3'	0.2'	0.6'	0.4'	0.9'	0.7'	1.6'	1.2'	3'	2'	6'	5'

The pictures below represent the magnification relationship between different lens types

2.8mm Lens



3.6mm Lens



6.0mm Lens



8.0mm Lens



12mm Lens



16mm Lens

