



How to select a proper security camera lens in 3 easy steps and save money doing it?

**1. Should I use Manual IRIS or Auto IRIS?**

- You can save money and use Manual IRIS Lens only when scene illumination never changes. Example: illuminated store or office.
- If the light changes it is recommended that you use Auto IRIS.

**2. What focal length lens do I need?**

- Guide: smaller the focal length number => wider is field of view.
- If you have security camera in the office or warehouse and you want to see as much as you can, you should go for 2.8 or 4 mm lens (makes wide, somewhat distant view)
- If you want to observe limited area, like entrance you should go for 8mm or (makes narrow view and objects are closer).
- Give us a call and we can help you determine what security camera lens will best suit your location.
- Use Vari-focal lenses to get flexibility for choosing best field of view.

**3: Order your security camera lens from Security Headquarters USA. We have all the security camera lenses you will ever need!!**

The **CCTV security camera lens chart** and **field-of-view diagrams** are designed to **assist you in selecting the right lens size** for your application. Please **contact us if you require additional information or assistance**. Keep in mind all of the security cameras we sell come equipped with **lenses that will achieve 95% of your surveillance applications**.

**CCTV Lens LUX Chart**



**Lux and low lighting chart**









Condition	Illumination		Details
	(FTCD)	(LUX)	
Sunlight	10,000	107,527	Daylight Range
Full Daylight	1,000	10,752.7	
Overcast Day	100	1,075.3	
Very Dark Day	10	107.53	
Twilight	1	10.75	
Deep Twilight	.1	1.08	
Full Moon	.01	.108	Low Light Level Range
Quarter Moon	.001	.0108	
Starlight	.0001	.0011	
Overcast Night	.00001	.0001	

During the day the amount of illumination reaching a scene depends on the time of day and atmospheric conditions. Direct sunlight produces the highest-contrast scene, allowing maximum identification of objects. On a cloudy or overcast day, less light is received by the objects in the scene, resulting in less contrast. To produce an optimum camera picture under the wide variation in light level (such as occurs when the sun is obscured by clouds), an automatic-iris camera system is required. Typically, scene illumination measured in **foot-candles (ftcd)** can vary over a range of 10,000 to 1 (or more), which exceeds the operating range of most cameras for producing good quality video images. The chart above summarizes the light levels occurring under daylight and these low light level conditions. The equivalent metric measure of **light level (lux)** compared with the English (ftcd) is given.

### CCTV Visual Lens Comparison Chart

The following chart displays the comparison of CCTV lens with the regular 135mm film camera lens.

CCTV lens		135mm lens	
Focal Length	Angle	Angle	Focal Length
2.5mm	120°	114°	14mm
			
			180° 15mm (Fisheye)
3.6mm	92°	94°	20mm
			
			94° 20mm

<b>4.3mm</b>	78°	75°	28mm		 <b>28mm</b>
<b>6.0mm</b>	53°	51°	45mm Standard lens for 135mm camera Regular angle of our eyes vision		 <b>50mm</b>
<b>12mm</b>	25°	24°	100mm		 <b>85mm</b>
<b>25mm</b>	18°	18°	135mm		 <b>135mm</b>

## CCTV Technical Lens Comparison Chart

Indicates total viewable area (WxH) at a given distance based on focal length used

Focal Length	5' (WxH)	10' (WxH)	20' (WxH)	40' (WxH)	50' (WxH)	100' (WxH)
2.5 mm	9.4x7.1	19x14	38x28	75x57	94x71	188x142
2.9 mm	8.6x6.4	17x13	34x26	69x51	86x64	171x129
3.6 mm	6.9x5.1	14x10	27x21	55x41	69x51	137x103
4.0 mm	6.0x4.5	12x9	24x18	48x36	60x45	120x90
4.3 mm	5.7x4.3	11x8.6	23x17	46x34	57x43	114x86
5.5 mm	4.5x3.4	9x6.8	18x14	36x27	45x34	90x68
6.0 mm	2.0x1.5	4x3	8x6	16x12	20x15	40x30
8.0 mm	1.5x1.1	3x2.3	6x4.5	12x9	15x11	30x22
12.0 mm	1.0x0.7	2x1.4	3.8x3	7.7x6	9.6x7	19x14

Use your 35mm camera and this chart to help make your lens decision.

## 35mm to CCTV Focal Length Conversion Chart

35 mm	1/4"	1/3"	1/2"	2/3"	1"	Angle
10	0.9	1.4	1.8	2.5	3.7	120.6
35	3.2	4.8	6.4	8.8	12.8	53.2
60	5.5	8.2	11.0	15.1	22	32.6
85	7.7	11.6	15.6	21.3	31.1	23.3
110	10.0	15.1	20.1	27.6	40.3	18.1
135	12.3	18.5	24.7	33.9	49.4	14.8
160	14.6	21.9	29.3	40.2	58.6	12.5
185	16.8	25.3	33.9	46.4	67.7	10.8
210	19.1	28.8	38.4	52.7	76.9	9.5
235	21.4	32.2	43.0	59.0	86.0	8.5
260	23.7	35.6	47.6	65.3	95.2	7.7

CCTV focal length numbers shown converted from a 35mm camera zoom lens.