

**COMPARATIVE FOCAL LENGTHS**  
Horizontal Angle vs. Effective Focal Length

(Focal Length Shown in Millimeters)  
**Format Frame In Millimeters**

Angle (Degrees)	Dia. Hor.	1/3"	1/2"	2/3"	1"	1 1/4"	S8mm	16mm	S16mm	35mm Academy	35mm Still
		6 4.8	8 6.4	11 8.8	16 12.8	21.4 17.12	7.5 6	12.7 10.16	14.6 12.5	27.2 21.76	43.2 36
0.5		550.0	733.4	1008.4	1466.8	1961.8	687.5	1164.2	1432.4	2493.5	4125.3
0.7		392.9	523.8	720.3	1047.7	1401.3	491.1	831.6	1023.1	1781.1	2946.6
1		275.0	366.7	504.2	733.4	980.9	343.8	582.1	716.2	1246.7	2062.6
1.5		183.3	244.4	336.1	488.9	653.9	229.2	388.1	477.4	831.1	1375.0
2		137.5	183.3	252.1	366.7	490.4	171.9	291.0	358.1	623.3	1031.2
2.5		110.0	146.7	201.6	293.3	392.3	137.5	232.8	286.4	498.6	824.9
3		91.7	122.2	168.0	244.4	326.9	114.6	194.0	238.7	415.5	687.4
3.5		78.6	104.7	144.0	209.5	280.2	98.2	166.3	204.6	356.1	589.1
4		68.7	91.6	126.0	183.3	245.1	85.9	145.5	179.0	311.6	515.5
4.5		61.1	81.4	112.0	162.9	217.9	76.4	129.3	159.1	276.9	458.1
5		55.0	73.3	100.8	146.6	196.1	68.7	116.4	143.1	249.2	412.3
6		45.8	61.1	84.0	122.1	163.3	57.2	96.9	119.3	207.6	343.5
7		39.2	52.3	71.9	104.6	140.0	49.0	83.1	102.2	177.9	294.3
8		34.3	45.8	62.9	91.5	122.4	42.9	72.6	89.4	155.6	257.4
9		30.5	40.7	55.9	81.3	108.8	38.1	64.5	79.8	138.2	228.7
10		27.4	36.6	50.3	73.2	97.8	34.3	58.1	71.4	124.4	205.7
15		18.2	24.3	33.4	48.6	65.0	22.8	38.6	47.5	82.6	136.7
20		13.6	18.1	25.0	36.3	48.5	17.0	28.8	35.4	61.7	102.1
25		10.8	14.4	19.8	28.9	38.6	13.5	22.9	28.2	49.1	81.2
30		9.0	11.9	16.4	23.9	31.9	11.2	19.0	23.3	40.6	67.2
35		7.6	10.1	14.0	20.3	27.1	9.5	16.1	19.8	34.5	57.1
40		6.6	8.8	12.1	17.6	23.5	8.2	14.0	17.2	29.9	49.5
45		5.8	7.7	10.6	15.5	20.7	7.2	12.3	15.1	26.3	43.5
50		5.1	6.9	9.4	13.7	18.4	6.4	10.9	13.4	23.3	38.6
55		4.6	6.1	8.5	12.3	16.4	5.8	9.8	12.0	20.9	34.6
60		4.2	5.5	7.6	11.1	14.8	5.2	8.8	10.8	18.8	31.2
65		3.8	5.0	6.9	10.0	13.4	4.7	8.0	9.8	17.1	28.3
70		3.4	4.6	6.3	9.1	12.2	4.3	7.3	8.9	15.5	25.7
75		3.1	4.2	5.7	8.3	11.2	3.9	6.6	8.1	14.2	23.5
80		2.9	3.8	5.2	7.6	10.2	3.6	6.1	7.4	13.0	21.5
85		2.6	3.5	4.8	7.0	9.3	3.3	5.5	6.8	11.9	19.6
90		2.4	3.2	4.4	6.4	8.6	3.0	5.1	6.2	10.9	18.0
95		2.2	2.9	4.0	5.9	7.8	2.7	4.7	5.7	10.0	16.5
100		2.0	2.7	3.7	5.4	7.2	2.5	4.3	5.2	9.1	15.1