



flickerfree speeds

60 Hz Flickerfree Filming Speeds at Any Shutter Angle

1.000	1.500	1.875	2.000
2.500	3.000	3.750	4.000
4.800	5.000	5.217	5.454
5.714	6.000	6.315	6.666
7.058	7.500	8.000	8.571
9.231	10.000	10.909	12.000
13.333	15.000	17.143	20.000
24.000	30.000	40.000	60.000
120.000			

60 Hz Flickerfree Filming Speeds at Specific Shutter Angles

Speed (fps)	Shutter Angle	
25.000	75.0°	150.0°
26.667	80.0°	160.0°
33.333	100.0°	200.0°
35.000	105.0°	210.0°
36.667	110.0°	
43.333	130.0°	
45.000	135.0°	
46.667	140.0°	
48.000	144.0°	
50.000	150.0°	
53.333	160.0°	
55.000	165.0°	
56.667	170.0°	
57.600	172.8°	
63.333	190.0°	
65.000	195.0°	
66.667	200.0°	
70.000	210.0°	
71.667	215.0°	

NOTE: Film Tests Should be Used to Verify Results