

Films are manufactured to react normally within the most used exposure range ($\frac{1}{2}$ - $\frac{1}{1000}$ sec.) Exposures shorter or longer than these involve a 'Reciprocity Failure Factor'. Reciprocity Failure is the name given to the breakdown of the reciprocal relationship between exposure (time/aperture) and the density of the resulting negative. At extreme exposure times, (fast and slow), light does not expose the silver as efficiently, resulting in under exposure. To compensate, the indicated meter reading is multiplied by the Reciprocity Failure Factor to give a correct exposure and normal negative density.

Suggested Reciprocity Failure Factors; (based on Tri-X film)

Indicated meter reading in secs.	Reciprocity Failure Factor.	Correct exposure for normal density.
1 secs.	1½	1½ secs.
2 secs.	2	4 secs.
3 secs.	2½	7½ secs.
4 secs.	3	12 secs.
7 secs.	4	28 secs.
10 secs.	5	50 secs.
20 secs.	6	2 mins.
40 secs.	7	4 mins. 40 secs.
80 secs.	8	10 mins. 40 secs.
3 mins.	9	25 mins.
6 mins.	10	1 hour
10 mins.	11	2 hours
20 mins.	12	4 hours
40 mins.	13	8 hours

As the exposure increases the highlights gain density faster than the shadow areas, hence the negative contrast increases. To compensate, an initial -20% (N-1) development is suggested.

Most in-camera light meters (and many hand-held...) will not be sensitive enough to function at night. Some exposure starting points (all-inclusive of Reciprocity Failure Factor.) based on Tri-X film (rated at 400 asa), -20% development, f5.6 aperture;

In city with direct street lighting; 5 seconds.
 Car headlights; 5 seconds.
 City skylines; 5 seconds.
 In city with indirect street lighting; 1 minute.
 City open spaces with distant lighting (e.g. Parks, waterfronts, etc.); 2-5 minutes.
 Landscape outside city; 10-30 minutes.
 Landscape (total darkness); 2-4 hours.

To begin with, bracket two stops either side of "correct" exposure. Write down ALL night exposures and compare with resulting negatives.