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CALCULATIONS FOR HIGH SPEED

1 ÷ EXPOSURE TIME = $360^\circ \div \text{Shutter Angle} \times \text{Frame Rate}$

Example: $360^\circ \div 120^\circ \times 360 \text{ fps} = 1 \div 1080 \text{ Exposure Time}$

EXPOSURE TIME AND STOP LOSS FROM 1/50 Second

1/50	1/100	1/200	1/400	1/800	1/1600	1/3200	1/6400	1/12,800	1/25,600
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	

f/stops 1, 1.4, 2, 2.8, 4, 5.6, 8, 11, 16, 22, 32, 45, 64, 90, 128, 180, 256

Note: Compensate 1/2 stop for Beamsplitter when applicable.

TIMES NORMAL SPEED = $\text{Frame Rate} \div \text{Transfer Rate (24 or 30)}$

Example: $360 \div 24 = 15 \text{ Times Normal Speed}$

FRAMES EXPOSED = $\text{Frame Rate} \times \text{Event Duration}$

Example: $360 \times .5 \text{ Second} = 180 \text{ Frames Exposed}$

SCREEN TIME = $\text{Frame Rate} \times \text{Event Duration} \div \text{Transfer Rate}$

Example: $360 \times .5 \div 24 = 7.5 \text{ Seconds Screen Time}$

FRAME RATE REQUIRED = $\text{Screen Time} \div \text{Event Duration} \times \text{Transfer Rate}$

Example: $7.5 \text{ Seconds} \div .5 \times 24 = 360 \text{ fps Required}$

RUN TIME = $\text{Frames Per Foot} \times \text{Footage} \div \text{Frame Rate}$

Example: $16 \times 1000' \div 360 = 44.4 \text{ Seconds Run Time}$

SCREEN TIME FOR MOVING OBJECTS =

$\text{Field of View} \div \text{Object Velocity} \times \text{Frame Rate} \div \text{Transfer Rate}$

Example: $2' \text{ field of view} \div 20' \text{ per second} \times 360 \text{ fps} \div 24 = 1.5 \text{ Seconds Screen time}$