Parabola Cheat Sheet
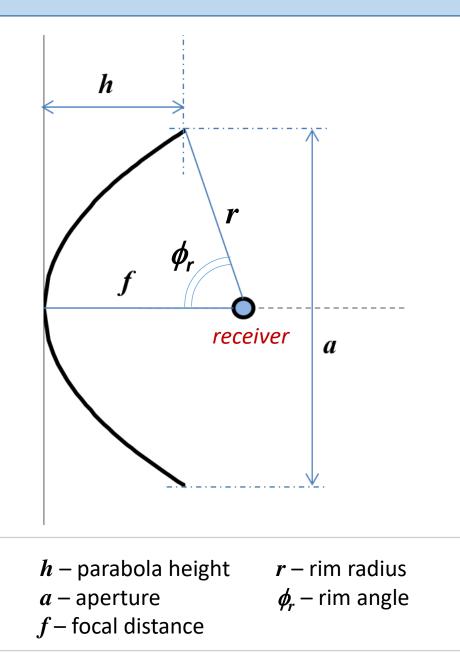

$$h = \frac{a^2}{16f}$$

Relationship among height, aperture, and focal distance

$$\phi_r = \tan^{-1}\left[\frac{8(f/a)}{16(f/a)^2 - 1}\right]$$

Relationship among aperture, focal distance, and rim angle

$$r = \frac{2f}{1 + \cos\phi}$$

Relationship focal distance, rim angle, and rim radius (this formula is true for any point on the parabola)

h – parabola height $\quad$ r – rim radius
a – aperture $\quad$ ϕ_r – rim angle
f – focal distance