The Photographic Footprint of a Camera on a Drone

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variables xsensor	36	width of sensor in mm		1 (36)
ysensor	24	height of sensor in mm	Field of view wide:	$2\tan^{-1}\left(\frac{36}{2\times50}\right) = 39.6^{\circ}$
focallen	50	focal length of lens in mm	Field of view tall:	$2\tan^{-1}\left(\frac{24}{2\times50}\right) = 26.99^{\circ}$
altitude	100	height in m	Field of view tall:	$2 \tan \left(\frac{1}{2 \times 50}\right) = 26.99$
xgimbal ygimbal	30 30	x-axis gimbal angle y-axis gimbal angle	From drone to bottom of picture:	$100 \times \tan\left(30 - \frac{1}{2} \times 39.6\right) = 17.99m$
78			from arone to settlem of product.	,
			From drone to top of picture:	$100 \times \tan\left(30 + \frac{1}{2} \times 39.6\right) = 118.33m$
			From drone to left of picture:	$100 \times \tan\left(30 - \frac{1}{2} \times 26.99\right) = 29.63m$
Drone Altitude = 100		titude = 100	From drone to right of picture:	$100 \times \tan\left(30 + \frac{1}{2} \times 26.99\right) = 94.88m$
			Height of photo footprint: Width of photo footprint:	94.88 - 29.63 = 65.25m $118.33 - 17.99 = 100.33m$
		Gimbal Angle 1x Angle of View = 16.5° Cimbal Angle 1x Angle of View = 16.5°	Angle X 3+ Angle of View 43.50	
Groun	ıd		<u> </u>	

Footprint = 65.25 m