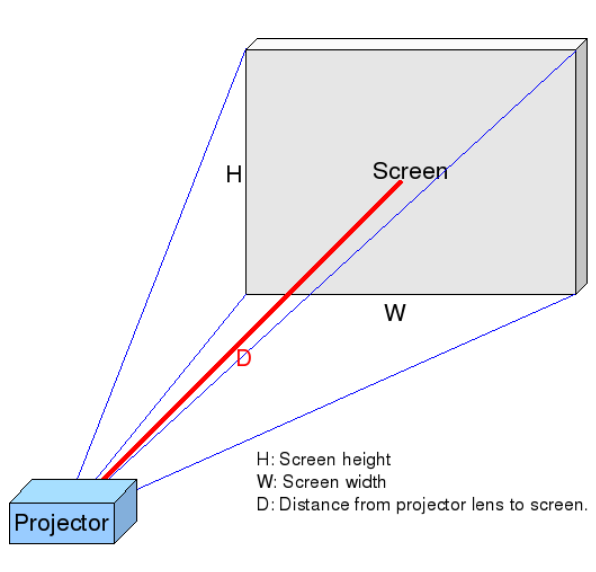


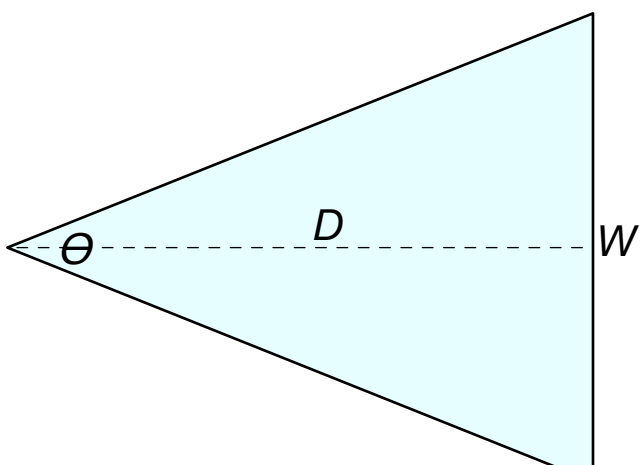
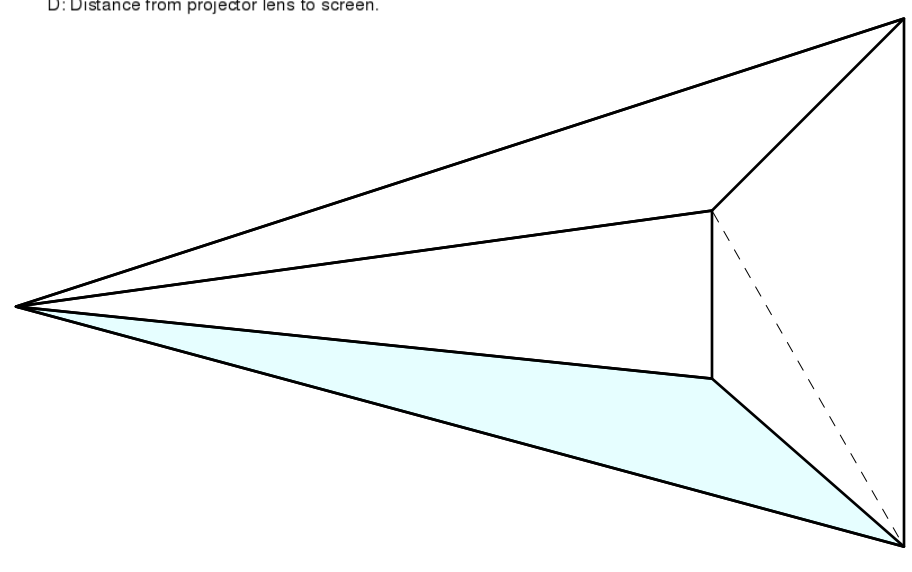
Throw ratio of 1.6, i.e. a 30" distance will fill a 24" diagonal screen.

HD 1080p angular field of view is thus 39 degrees horizontally, 22 degrees vertically, and 45 degrees diagonally.

The projector and webcam should be very close to being aligned—maybe they should even be “focusable” at a certain distance?



Throw Ratio is defined as D/W



camera (video): $\theta = 39^\circ$
 $\tan(\theta/2) = W/(2D)$
 $0.35 = W/(2D)$
 $D = 1.43W$

projector:
 $D = 1.6W$

Some “short throw” projectors have throw ratios of 0.9:1

...while others are more like 0.62

... or 0.5

Projector comparison:



\$200
 1:1 throw
 150 Lumen
 3.7 x 1.4 x 6.0"

This will match the camera's FOV in still image mode, or in the 2x2-binning modes (e.g. 1296x972)



\$190
 1.6:1 throw
 55 Lumen
 Battery
 2.9 x 0.8 x 4.2"



\$383
 1.2:1 throw
 300 Lumen
 3.9 x 1.6 x 5.9"



\$115
 1.5:1 throw
 25 Lumen
 Battery
 2.4 x 4.5 x 0.8"



\$199
 1.5:1 throw
 70 Lumen
 Battery
 5.6" x 2.9" x 0.9"



\$211
 1.65:1 throw
 100 Lumen
 4.7 x 3.2 x 1.0"