

Calculating Lens Focal Length

1) $f = v \times (D/V)$ or 2) $f = h \times (D/H)$

f : focal length of lens

V : Vertical field of view

H : Horizontal field of view

D : Distance from Lens to Object

v : vertical multiplier (see table below)

h : horizontal multiplier (see table below)

Table 1

Camera Format	1 inch	2/3 inch	1/2 inch	1/3 inch
v	9.6	6.6	4.8	3.6
h	12.8	8.8	6.4	4.8

For Example:

To calculate focal length using:

1/2 inch camera v = 4.8

Vertical field of view V = 340 mm

Distance from lens to object D = 2500 mm

substitute these data to formula #1 above:

$f = 4.8 \times (2500/340) = \text{approx. } 35 \text{ mm}$

Therefore, specify a 35mm lens to achieve a 340mm vertical f.o.v. from 2500mm object distance with 1/2" format car

Note: f.o.v. (V or H) and object distance (D) can be in any units of measure, provided they are both the same.