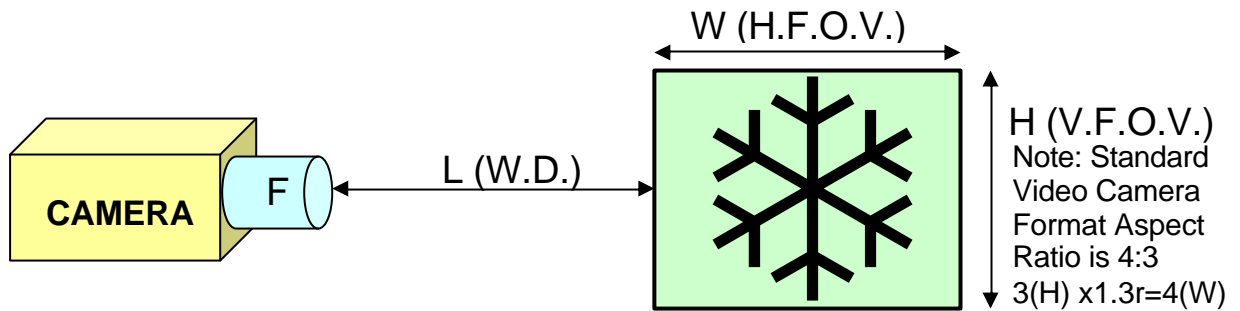




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CCTV LENS SELECTION

CALCULATION OF LENS FIELD OF VIEW



CAMERA SENSOR FORMAT							
f	1/4"	1/3"	1/2"	1/1.8"	2/3"	1"	35mm
F=	$\frac{3.6 \times L}{W}$	$\frac{4.8 \times L}{W}$	$\frac{6.4 \times L}{W}$	$\frac{8.5 \times L}{W}$	$\frac{8.8 \times L}{W}$	$\frac{12.8 \times L}{W}$	$\frac{36 \times L}{W}$
F=	$\frac{2.7 \times L}{H}$	$\frac{3.6 \times L}{H}$	$\frac{4.8 \times L}{H}$	$\frac{6.8 \times L}{H}$	$\frac{6.6 \times L}{H}$	$\frac{9.6 \times L}{H}$	$\frac{24 \times L}{H}$
W=	$\frac{3.6 \times L}{F}$	$\frac{4.8 \times L}{F}$	$\frac{6.4 \times L}{F}$	$\frac{8.5 \times L}{F}$	$\frac{8.8 \times L}{F}$	$\frac{12.8 \times L}{F}$	$\frac{36 \times L}{F}$
H=	$\frac{2.7 \times L}{F}$	$\frac{3.6 \times L}{F}$	$\frac{4.8 \times L}{F}$	$\frac{6.8 \times L}{F}$	$\frac{6.6 \times L}{F}$	$\frac{9.6 \times L}{F}$	$\frac{24 \times L}{F}$
L=	$\frac{W \times F}{3.6}$	$\frac{W \times F}{4.8}$	$\frac{W \times F}{6.4}$	$\frac{W \times F}{8.5}$	$\frac{W \times F}{8.8}$	$\frac{W \times F}{12.8}$	$\frac{W \times F}{36}$
L=	$\frac{H \times F}{2.7}$	$\frac{H \times F}{3.6}$	$\frac{H \times F}{4.8}$	$\frac{H \times F}{6.8}$	$\frac{H \times F}{6.6}$	$\frac{H \times F}{9.6}$	$\frac{H \times F}{24}$

F = Focal Length of Lens in millimetres.

W = Width of Scene to be imaged - Horizontal Field of View (H.F.O.V.)

H = Height of Scene to be imaged - Vertical Field of View (V.F.O.V.)

L = Distance between Lens & Scene to be imaged - Working Distance (W.D.)

Example: To determine what Lens is required to image an object 70mm Square at a Length or Working Distance of 500mm, use the formulae along the 2nd row. e.g.: If your Camera has a 1/3" format Sensor then multiply the W.D. by 3.6 & divide by 70 = 25.7; the nearest standard Lens in this case is 25.0mm.

Note: 1) Dimensions of W, H & L must be in the same units e.g. mm, cm or inches etc.
 2) If your camera has a different Sensor Format to the ones listed in the table then you can replace the figures by using the equation: [No. of Pixels x Pixel Size]
 e.g.: if the camera has 1024 x 1024 effective pixels @ 10µm (0.01mm) this =

$$F = \frac{10.24 \times L}{W/H} \quad \text{or} \quad W/H = \frac{10.24 \times L}{F} \quad \text{or} \quad L = \frac{W/H \times F}{10.24}$$

ALRAD can supply a wide choice of Lenses from various Manufactures to achieve your desired images: Please contact us for more details.