

FILM & VIDEO ASPECTS RATIOS

The term "Aspect Ratio" refers to the width of a picture (or screen) in relation to its height. Ratios are expressed in the form "width x height". For example, a 4x3 ratio means the picture is 4 units wide by 3 units high. Note that the actual physical size of the picture is irrelevant - aspect ratio refers only to the ratio between width and height.

The three most common aspect ratios are shown below. There are many variations in addition to these but you don't need to worry about them at this stage.

4x3

This is the standard television format used throughout the second half of the 20th Century. Sometimes referred to as 12x9.



16x9

This format is gaining acceptance as the new standard for widescreen TV and DVD.



21x9 (Cinemascope)

A very wide screen format used for theatrical release movies.



The problem of converting widescreen pictures into the 4x3 TV format has plagued film and television companies for years. Faced with the choice of using the unpopular "letterbox" format (black bars above and below the picture) or losing parts of the picture, most companies have opted for the latter.

If we take the 29x9 image above and convert it to a narrower format, we will have to lose quite a large part of the picture. The blue lines show where the picture will be cropped at 16x9, and the red lines show a 4x3 version.



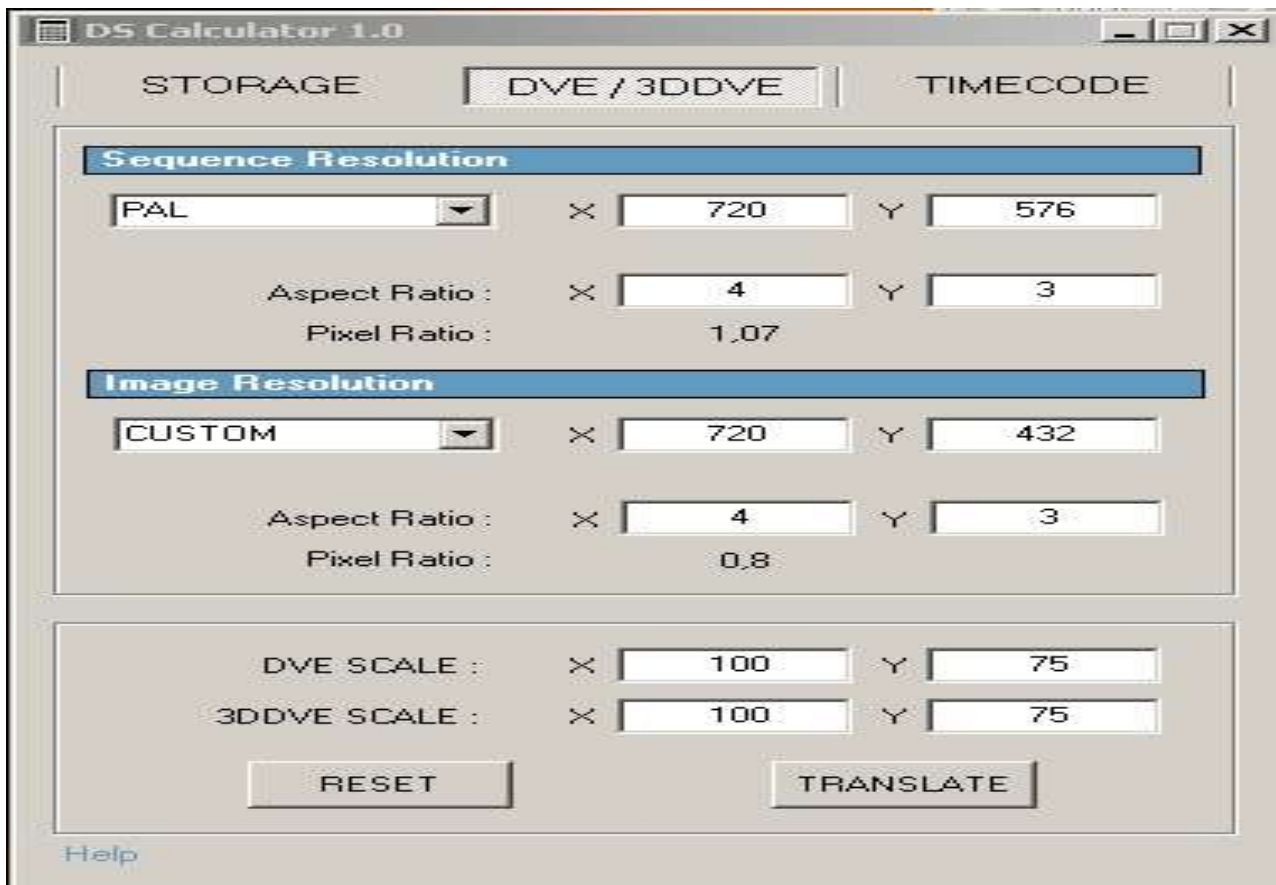
VIGTIGT: Fotografer frammer således at når der optages scope skæres der 1/3 top og 2/3 bund ud af wide udgaven !

Format	Aspect Ratio	Aperture		X : Y
		mm	inch	
16 mm Film	1.33	7.21 x 9.65	0.284 x 0.380	4 : 3
35 mm Film (before 1953)	1.37	15.2 x 21	0.600 x 0.825	4 : 2.92
35 mm Film (USA)	1.85	11.3 x 21	0.446 x 0.825	
35 mm Film (Europe)	1.65	12.7 x 21	0.500 x 0.825	
35 mm Film (Anamorphic)	2.35	17.8 x 21	0.702 x 0.825	
70 mm Film	2.21	22 x 48.6	0.868 x 1.913	
35 mm Slide (Horizontal)	1.48	22.9 x 34	0.902 x 1.340	4 : 2.7
35 mm Slide (Vertical)	0.68	34 x 22.9	1.340 x 0.902	2.7 : 4
NTSC Video	1.33			4 : 3
PAL Video	1.33			4 : 3
HDTV	1.78			16:09:00
Letterbox Video	1.85			1.85 : 1
"Widescreen"	1.85			1.85 : 1
Cinemascope	2.35			
A4 Paper	1.41	210 x 297		4 : 2.83
'8 1/2 x 11' Paper	1.30	215.7 x 279.4		8.5 : 11

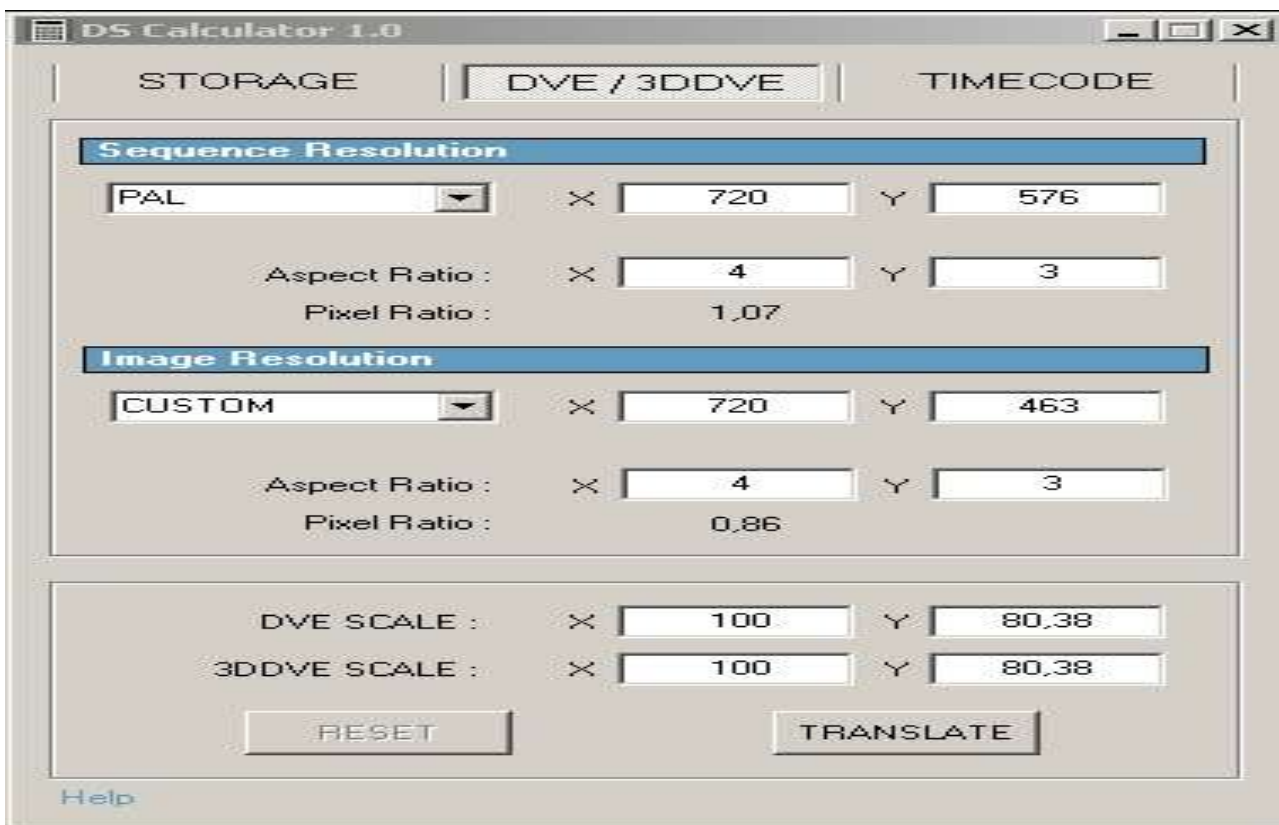
PAL VIDEO ASPECTS

non square $\frac{\text{width}}{\text{height}} = 1,07$

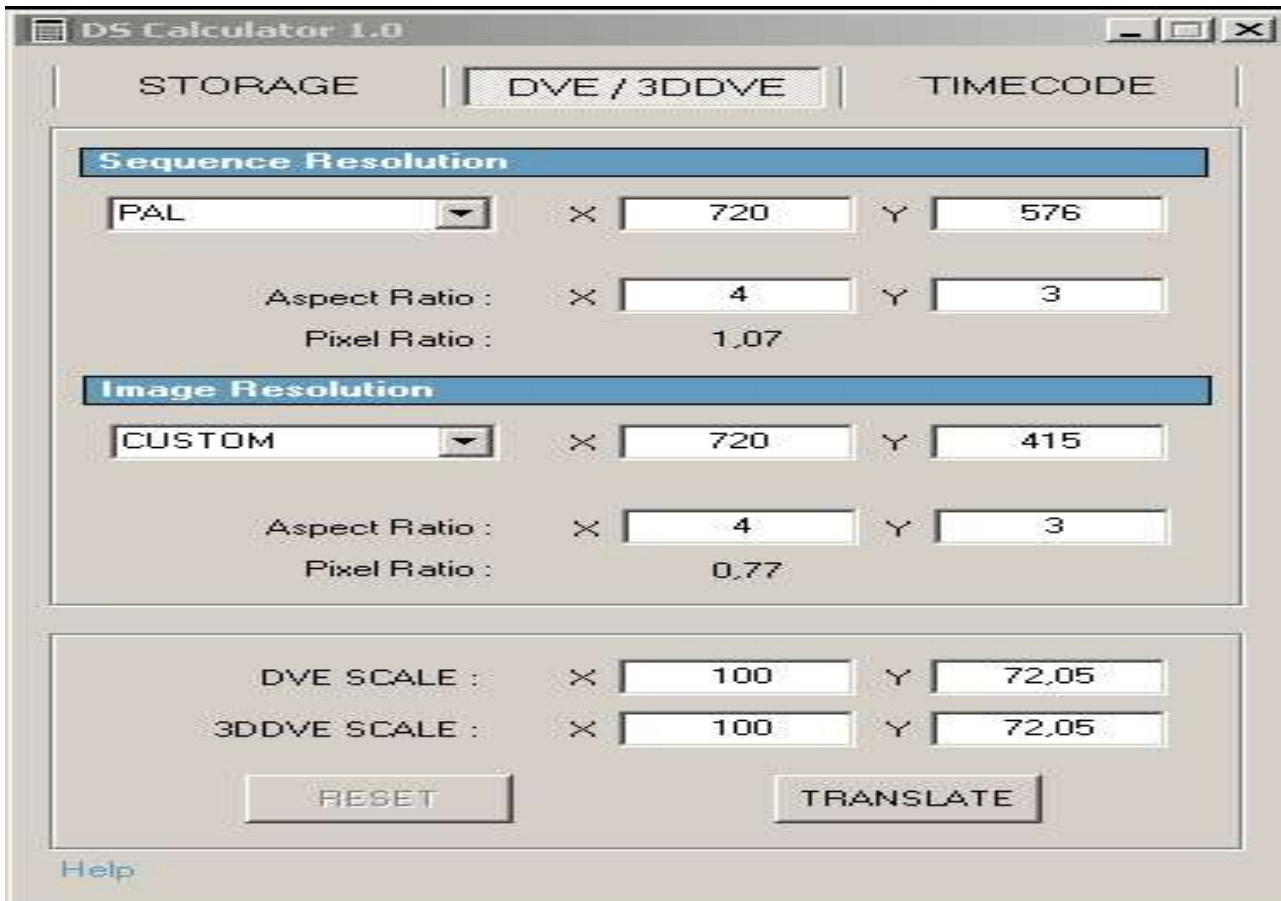
Format	X pixels	Y pixels	X:Y	Aspect	pixel
PAL 4:3	720	576	4:3	1:1,33	non square
PAL 16:9 letterbox	720	432	16:9	1:1,78	non square
PAL US WIDE letterbox	720	415		1:1,85	non square
PAL EU WIDE letterbox	720	463		1:1,66	non square
PAL SCOPE letterbox	720	326		1:2,35	non square
PAL 16:9 anamorph	720	576	16:9	1:1,78	non square
PAL SCOPE 16:9 anamorph	720	435			



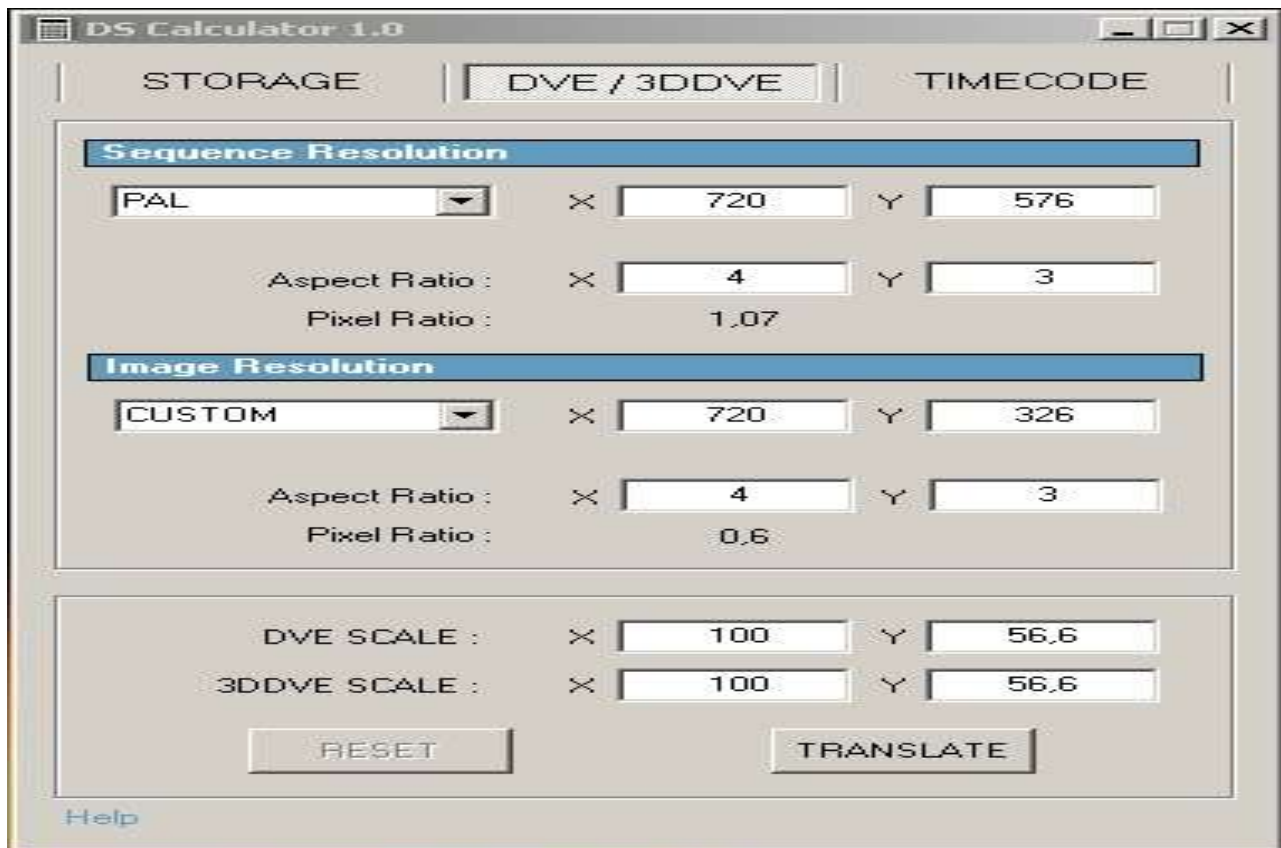
PAL VIDEO 16:9



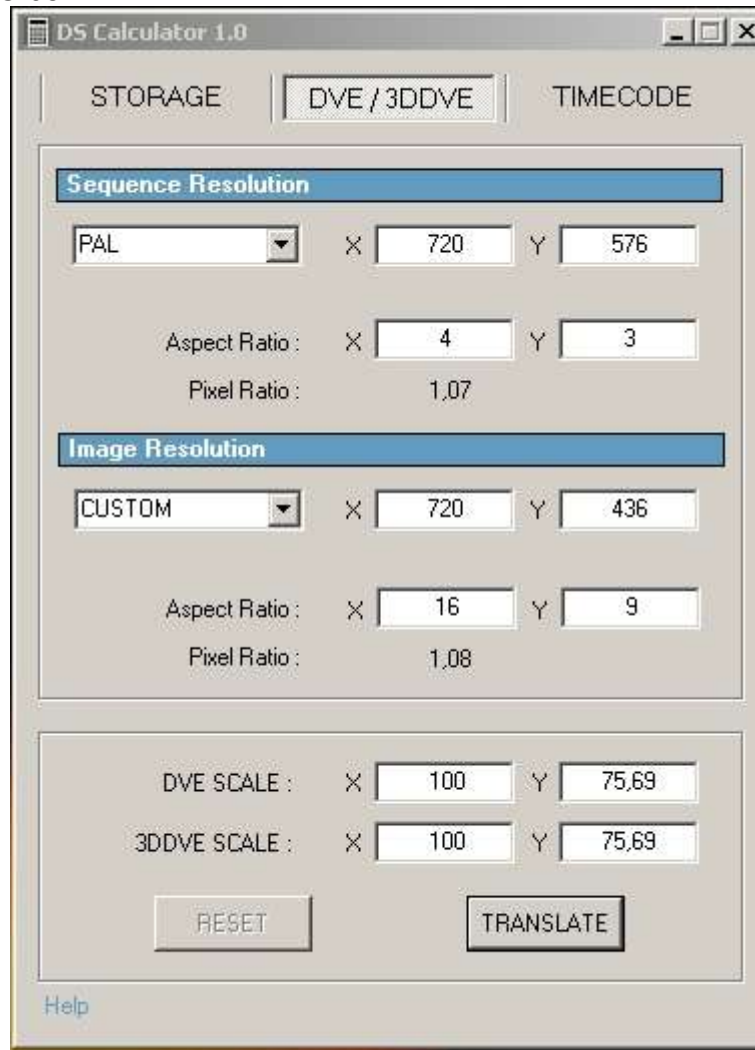
PAL VIDEO EU WIDE letterbox



PAL US WIDE letterbox



PAL SCOPE letterbox



PAL SCOPE 16:9 Anamorph (Y =435)

HIGH DEFINITION ASPECTS

Format	X pixels	Y pixels	X:Y	Aspect	pixel
HDCAM 16:9	1920	1080		1:1,77	square
HDCAM scope letterbox	1920	817		1:2,35	square