

# UNRAVEL ASPECT RATIO CHEAT SHEET v2.2

Calculating out the required resolutions for particular aspect ratios can be a little tricky so we've created a cheat sheet to help simplify this process. Below is the resolution to use when exporting for various aspect ratios and frame sizes. If you spot any faults or have any suggestions for updated versions, please let us know.

Latest version available at [unravel.com.au/aspect-ratio-cheat-sheet](http://unravel.com.au/aspect-ratio-cheat-sheet)

Note: Many people refer to 2.35:1, 2.39:1 and 2.40:1 but these days they are usually all referencing the 2.39:1 aspect ratio. 2.35:1 was used in films prior to 1970 and 2.40:1 is an incorrect rounding from 2.39:1 to 2.40:1. Having said this, there are times when delivering at 2.40:1 is actually required rather than 2.39:1 - Bluray's spec for anamorphic/scope content is one example. As a result - all variants are included in this document. When it comes to anything between 2.35-2.44 we find it's best to look at your target destination and run with their predefined spec. (i.e. Blu-ray @ 1920x800, 2KDCP @ 2048x858, 4KDCP @ 4096x1716 etc.). It always pays to check what your destination is expecting to receive from you rather than trying to convince them you have it the right way round! Since v2.1 of this document, all 2.39 aspect ratios have been calculated based on Digital Cinema Scope 2.39 aspect ratio which is actually 2048/858. This has been done for pragmatic reasons as we assume that most folks that are targeting a 2.39 ratio are doing this to match a scope aspect ratio in cinema.

From version 2.2 onward, all ratios that don't divide perfectly have been rounded down to their closest even integer. This has been done to better support field encoding, codec requirements and general sanity. Values have been rounded down rather than up so that image data is never caught halfway between framing and blanking. I.e. It's better to crop imagery slightly than to have pixels only extending partially into a new line.

## Cinema DCP 4K

Aspect Ratio	Resolution
Flat (1.85)	3996x2160
Scope (2.39)	4096x1716
Full Container (1.90)	4096x2160

## Cinema DCP 2K

Aspect Ratio	Resolution
Flat (1.85)	1998x1080
Scope (2.39)	2048x858
Full Container (1.90)	2048x1080

## 8K

Aspect Ratio	Resolution
1.33 (4:3)	8192x6144
1.66 (5:3)	8192x4914
1.78 (16:9)	8192x4608
1.85	8192x4428
1.90 (RED 8K FF)	8192x4320
2.00	8192x4096
2.35	8192x3484
2.37 (RED 8K Wide)	8192x3456
2.39 (DCI Scope)	8192x3432
2.40	8192x3412
2.44	8192x3356

## 8K - UHD

Aspect Ratio	Resolution
1.33 (4:3)	7680x5760
1.66 (5:3)	7680x4608
1.78 (16:9)	7680x4320
1.85	7680x4150
1.90	7680x4042
2.00	7680x3840
2.35	7680x3268
2.37	7680x3240
2.39 (DCI Scope)	7680x3216
2.40	7680x3200
2.44	7680x3146

### 6K

Aspect Ratio	Resolution
1.33 (4:3)	6144x4608
1.66 (5:3)	6144x3686
1.78 (16:9)	6144x3456
1.85	6144x3320
1.90	6144x3232
1.94 (6K Dragon FF)	6144x3160
2.00	6144x3072
2.35	6144x2614
2.37 (RED 6K Wide)	6144x2592
2.39 (DCI Scope)	6144x2574
2.40	6144x2560
2.44	6144x2518

### 5K

Aspect Ratio	Resolution
1.33 (4:3)	5120x3840
1.66 (5:3)	5120x3072
1.78 (16:9)	5120x2880
1.85	5120x2766
1.90 (EPIC-X FF)	5120x2700
2.00	5120x2560
2.35	5120x2178
2.37 (RED 5K Wide)	5120x2160
2.39 (DCI Scope)	5120x2144
2.40	5120x2132
2.44	5120x2098

### 4K

Aspect Ratio	Resolution
1.33 (4:3)	4096x3072
1.66 (5:3)	4096x2456
1.78 (16:9)	4096x2304
1.85	4096x2214
1.90 (4K RED)	4096x2160
2.00	4096x2048
2.35	4096x1742
2.37 (RED 4K Wide)	4096x1728
2.39 (DCI Scope)	4096x1716
2.40	4096x1706
2.44	4096x1678

### 4K - UHD

Aspect Ratio	Resolution
1.33 (4:3)	3840x2880
1.66 (5:3)	3840x2304
1.78 (16:9)	3840x2160
1.85	3840x2074
1.90	3840x2020
2.00	3840x1920
2.35	3840x1634
2.37 (64:27)	3840x1620
2.39 (DCI Scope)	3840x1608
2.40	3840x1600
2.44	3840x1572

### 3K

Aspect Ratio	Resolution
1.33 (4:3)	3072x2304
1.66 (5:3)	3072x1842
1.78 (16:9)	3072x1728
1.85	3072x1660
1.90 (3K RED)	3072x1620
2.00	3072x1536
2.35	3072x1306
2.37 (RED 3K Wide)	3072x1296
2.39 (DCI Scope)	3072x1286
2.40	3072x1280
2.44	3072x1258

### 3K - HD

Aspect Ratio	Resolution
1.33 (4:3)	2880x2160
1.66 (5:3)	2880x1728
1.78 (16:9)	2880x1620
1.85	2880x1556
1.90	2880x1514
2.00	2880x1440
2.35	2880x1224
2.37 (64:27)	2880x1214
2.39 (DCI Scope)	2880x1206
2.40	2880x1200
2.44	2880x1180

### 2K

Aspect Ratio	Resolution
1.33 (4:3)	2048x1536
1.66 (5:3)	2048x1228
1.78 (16:9)	2048x1152
1.85	2048x1106
1.90 (4K RED)	2048x1078
2.00	2048x1024
2.35	2048x870
2.37 (64:27)	2048x864
2.39 (DCI Scope)	2048x858
2.40	2048x852
2.44	2048x838

### 1080p

Aspect Ratio	Resolution
1.33 (4:3)	1920x1440
1.66 (5:3)	1920x1152
1.78 (16:9)	1920x1080
1.85	1920x1036
1.90	1920x1010
2.00	1920x960
2.35	1920x816
2.37 (64:27)	1920x810
2.39 (DCI Scope)	1920x804
2.40 (Blu-Ray Scope)	1920x800
2.44	1920x786

720p

Aspect Ratio	Resolution
1.33 (4:3)	1280x962
1.66 (5:3)	1280x768
1.78 (16:9)	1280x720
1.85	1280x690
1.90	1280x672
2.00	1280x640

720p continued...

Aspect Ratio	Resolution
2.35	1280x544
2.37 (64:27)	1280x540
2.39 (DCI Scope)	1280x536
2.40	1280x532
2.44	1280x524

576p (PAL Standard Definition)

Aspect Ratio	Resolution (Square Pixels 1.0)	Resolution (PAL Widescreen 1.46 Pixel Aspect Ratio)	Resolution (PAL DV 1.09 Pixel Aspect Ratio)
1.33 (4:3)	768x576	--	720x576
1.78 (16:9)	1024x576	720x576	--

480p (NTSC DV SD)

Aspect Ratio	Resolution (Square Pixels 1.0)	Resolution (PAL Widescreen 1.46 Pixel Aspect Ratio)	Resolution (PAL DV 1.09 Pixel Aspect Ratio)
1.33 (4:3)	640x480	--	720x480
1.78 (16:9)	853x480	720x480	--

480p (NTSC D1 SD)

Aspect Ratio	Resolution (Square Pixels 1.0)	Resolution (PAL Widescreen 1.46 Pixel Aspect Ratio)	Resolution (PAL DV 1.09 Pixel Aspect Ratio)
1.33 (4:3)	648x486	--	720x486
1.78 (16:9)	864x486	720x486	--