

## Les tailles de téléviseurs

En considérant que le [pouvoir séparateur](#) de l'œil est de une [minute d'arc](#) (0°01'), la distance idéale pour regarder un [téléviseur](#) classique 4/3 (576 lignes et 720 [pixels](#) par ligne) est d'environ quatre fois la diagonale de l'écran (soit une distance de 2 mètres pour un [téléviseur](#) de 50 centimètres de diagonale); pour un 16/9 la distance idéale est d'environ trois fois la diagonale.

Les téléviseurs les plus grands atteignent aujourd'hui plus d'un mètre de diagonale, mais la distance à laquelle on les regarde reste sensiblement la même. Si l'on veut conserver la même qualité d'image avec un téléviseur de 1 mètre de diagonale situé à la même distance, il faut augmenter la définition de l'image.

## Qualité de l'image de diffusion

- Depuis juin 2005, Canal+ diffuse un programme démo HD qui est devenu une offre régulière depuis 2006.
- Depuis début 2006, TPS diffuse des programmes HD sur les chaînes TPS Star (en permanence), TF1 et M6 (ponctuellement).
- L'opérateur de satellites Astra diffuse aussi un canal de démonstration HD.
- Le satellite Hot-Bird diffuse un programme test du HD Forum, consortium de firmes autour du concept HD.

Dans un futur proche, la [télévision numérique terrestre](#) devrait émettre certaines chaînes en HD, en utilisant une compression [MPEG-4 AVC](#) (encore appelé MPEG-4 part 10 ou H.264). Les premiers essais ont eu lieu en juin 2006 à l'occasion des internationaux de tennis de Roland Garros, diffusés expérimentalement sur Paris, Lyon et Marseille. Cette grande première mondiale a été réussie par France Télévisions qui pendant deux semaines a alimenté sur les émetteurs TNT de ces 3 villes en MPEG4 HD 24/24 H de ces programmes issus des Internationaux de France de Roland Garros mais aussi sur les réseaux de TV sur ADSL des deux opérateurs que sont FREE et Orange toujours en MPEG 4 HD.

High Definition usually refers to 720 horizontal lines of video format resolution or more.

Video Format Supported	Native Resolution (W×H)	Pixels (Advertised Megapixels)	Aspect Ratio (X:Y)		Description
			Image	Pixel	
1280×720	1024×768	786,432 (0.8)	16:9	4:3	Typically a PC resolution ; also exists as a standardized " <a href="#">-Ready</a> " TV on the <a href="#">display</a> with non-square pixels.
	1280×720	921,600 (0.9)	16:9	1:1	Typically one of the PC resolutions on , also used for 750-line video, as defined in SMPTE 296M, ATSC A/53, ITU-R BT.1543, <a href="#">television</a> , DLP and LCOS projection HDTV displays.
	1366×768	1,049,088 (1.0)	683:384 (Approx 16:9)	1:1 Approx	Typically a TV resolution ; also exists as a standardized HDTV displays as ( <a href="#">Ready 720p</a> ), TV that used on HDTV displays.
1920×1080	1280×1080	1,382,400 (1.4)	32:27 (Approx 16:9)	3:2	Non-standardized " <a href="#">Ready</a> ", TV. Used on HDTVs with non-square pixels.
1920×1080	1920×1080	2,073,600 (2.1)	16:9	1:1	A standardized HDTV displays as ( <a href="#">Ready 1080p</a> ) TV, that used on HDTV displays. Used for 1125-line video, as defined in SMPTE 274M, ATSC A/53, ITU-R BT.709.
3840×2160	3840×2160	8,294,400 (8.3)	16:9	1:1	Quad HDTV for DCI Cinema 4k standard format, (Currently, there is no HD Ready Quad HDTV format until 2015).

A common native resolution used in [Ready](#) LCD TV panels is 1366 x 768<sup>[16]</sup> instead of the [Standard](#) 1280 x 720 pixels. This is due to maximization of manufacturing yield and resolution of , that comes with a 768 pixel format. Hence, LCD manufacturers adopt the 16:9 ratio compatible for the [Ready 1080p](#) video standard. Nevertheless, every has an processing chipset to fix resolution scaling and color rendering, eg XD Engine, BRAVIA Engine. Only when viewing 1080i/1080p HD contents under [Ready 1080p](#) where there is true pixel-for-pixel reproduction, and for [ready](#) LCD TV, do some signals undergo a scaling process which results in a 3-5% loss of picture.

Video Format Supported	Screen Resolution (W×H)	Pixels (Advertised Megapixels)	Aspect Ratio (X:Y)		Description
			Image	Pixel	
1280×720	1248×702 Clean Aperture	876,096 (0.9)	16:9	1:1	Used for 750-line video with raster artifact/overscan compensation, as defined in SMPTE 296M.
1920×1080	1888×1062 Clean Aperture	2,001,280 (2.0)	16:9	1:1	Used for 1125-line video with raster artifact/overscan compensation, as defined in SMPTE 274M.
1920×1080	1440×1080 /	1,555,200 (1.6)	4:3	4:3:1	Used for anamorphic 1125-line video in the HDCAM and HDV formats introduced by and defined (also as a luminance subsampling matrix) in <a href="#">D11</a> .

It should be noted that the numbers used for "HD-Ready" image resolutions do **not** constitute acceptable 750- or 1125-line video signals in most standards-compliant hardware; in this respect terms such as "720p" and "1080p" are mostly used for advertising, though that does not necessarily mean that HD-Ready TVs labeled in this manner are incapable of accepting those formats as input.

Additionally, the "Clean Aperture" numbers are almost always contained within the frames of their respective "Production Aperture" numbers (e.g., a 1888×1062 rectangle would be contained within a 1920×1080 frame). This is to maintain compatibility with analog signals, which can often become distorted close to the edge of the frame. It also increases the chance that a digital signal being played on -enabled equipment will display the entire picture visibly.

### Standard frame or field rates

- 23.976p (allow easy conversion from standard film-rate to drop-frame by [:2 pull down](#) techniques)
- (cinematic film)
- 25p (, DTV progressive material)
- 30p (29.97p in drop frame) ( DTV progressive material)
- 50i ( & )
- 50p (, DTV progressive material)
- 60i (59.94i in drop frame) (, [-M](#))
- 60p (59.94p in drop frame) ( DTV progressive material)

### Broadcast station format considerations

At the least, HDTV has twice the linear resolution of [standard definition television](#) (SDTV), thus showing greater detail than either analog television or regular . The technical standards for broadcasting HDTV also handle the 16:9 [ratio](#) images without using or stretching, thus increasing the effective image resolution.

The optimum format for a broadcast depends upon the type of videographic recording medium used and the image's characteristics. The field and frame rate should match the source and the resolution. A very high resolution source may require more bandwidth than available in order to be transmitted without loss of fidelity. The [compression](#) that is used in all digital HDTV storage and transmission systems will distort the received picture, when compared to the uncompressed source.

