

OZ THEATRE SCREENS

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If You're Serious About Your Image

Screen sizes and Cinemascope setup information

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16:9 (1.78:1) format Majestic Screens

HDTV format is 16:9 or 1.78:1

All projector, lcd and plasma panels are native 16:9 panels.

In projection terms, a 16:9 screen is referred to as CIW or Constant Image Width. This means the width of your image will not change. However, when watching blockbusters movies, the majority are in Cinemascope format. On a 16:9 screen you will have black bars top and bottom which take up 25% of your overall image height. (12.5% top and bottom) For High Def TV and any 16:9 movies you will fill the entire screen with active picture.

To help choose the best screen size for your room, we normally work with a formula of seating distance divided by 3.0 = screen height. There is some room to move either side of this formula which is outlined below.

SD divided 2.6 to 3.0 gives one more freedom in screen size. For example: A seating distance of 4.0 metres would mean 4 divided by 2.6 = 1.53 metre high image, which is just short of a 125 inch screen. 4 divided by 3.0 = 1.33 high, which is about a 106 inch screen size.

2.6 being the absolute maximum one could go for 1080P sources. (Some will say 2.0 but we feel this is too close to resolve 1080P) 2.80 being in the middle of this formula. If we use 2.80 we would get a 1.42 metre high image which is just short of a 115 inch 16:9 screen. (This is based on a 4 metre seating distance from the screen)

For LCD projectors, which have a wider inter-pixel gap, we recommend a slightly smaller screen. For both DLP and D-ILA or LCOS (also known as SXRD) the 2.6 formula can work up to a certain point.

What if the room is 7 metres long and seating distance of 6 metres? 6 into 3 = a 2 metre high image. This is too large and should be scaled down. Why? Keep in mind, the larger the screen gets, the further out the light from the projector is dispersed. This means the bigger you go, the dimmer the image will get, and the further back you have to sit because the pixels will get larger.

Today's Home Theatre Projectors are not designed to light up screens 2 metres tall. If you're thinking of utilizing a long room you need to consider what your on screen luminance will be.

16:9 HDTV Majestic Fixed Screen sizes

Add 2mm to each frame measurement for depth of velvet finish.

16:9 (1.78:1) Format

Viewing Diagonal Inches	Overall size inc frame in mm	Viewing area in mm
73"	1766 X 1059	1616 X 909
82"	1980 X 1169	1812 X 1019
84"	2009 X 1195	1859 X 1045
88"	2103 X 1248	1953 X 1098
92"	2184 X 1295	2032 X 1143
96"	2271 X 1343	2121 X 1193
100"	2360 X 1393	2210 X 1243
106"	2500 X 1472	2350 X 1321
110"	2590 X 1522	2440 X 1372
115"	2693 X 1580	2543 X 1430
120"	2796 X 1638	2646 X 1488
125"	2918 X 1707	2768 X 1557
130"	3030 X 1770	2880 X 1620
135"	3140 X 1831	2990 X 1681
140"	3250 X 1894	3100 X 1744
145"	3360 X 1956	3210 X 1806
150"	3470 X 2018	3320 X 1868

All screen sizes available in all fabrics except for grey which has max size of 106"

Higher gain screens are a pointless concept, they restrict viewing angles and hot spot. They were designed decades ago because projectors in those days lacked lumens. Today's machines do not. Today's new range of 1080P projectors are designed for Home Theatre rooms that range in size from 3 metres to around 8 metres in length.

Another thing to keep in mind is what you're watching. HDTV is not as clear as Blu Ray so you may want to consider scaling the screen size down slightly if you're using your Projector for normal TV viewing. If watching mainly Blu Ray you could use the maximum screen size for your seating distance.

21.33:9 (2.37:1) format Majestic Screens

For the Ultimate movie format. Cinemascope movies are MEANT to be as tall as your 16:9 image but one third (33%) wider. Not shorter and the same width!

When you're at the movies, after the ads run their course, if it's a scope film, a lens slides into place and the curtains open up out to the wall to reveal the deluxe Cinemascope format.

Now that Anamorphic lenses have come into the market at affordable prices, we can now achieve this in our Home Theatres.

For a 4 metre viewing distance, a 130-140 inch Cinemascope screen is the ultimate way to view movies.

A 130 scope screen will give you a 103 inch 16:9 screen, which is 3.12 times the screen height. A 140 scope screen will give you just over a 110 inch 16:9 image, which is 2.91 times the screen height.

The best way to achieve Cinemascope is by using an Anamorphic lens (see www.anamorphiclens.com.au) for more info. By using a lens, we utilise the active pixels in the black bars. This is a 2 part process. First we turn on the **Vertical Stretch** using our projector, this stretches the image vertically turning a circle into an oval.

The 2nd part is the optical stretching of the light beam by using the Lens. Anamorphic lenses stretch the light beam in the horizontal plane only, by 33%, this restores the geometry. The result is CIH or Constant Image Height. This means the height of your image never changes, no black bars ever again and deluxe cinemascope images the way they were meant to be viewed.

The mathematics is a 78% larger image than compared to viewing a scope movie on a 16:9 screen, plus the added benefit of 500,000 extra pixels on screen resulting in a brighter, denser and clearer image.

2.37:1 Cinemascope Majestic Fixed Screen sizes

Add 2mm to each frame measurement for depth of velvet finish.

21:9 (2.37:1) Format

Viewing Diagonal Inches	Overall size inc frame mm	Viewing area in mm
92"	2306 X 1060	2156 X 910
100"	2506 X 1144	2356 X 994
110"	2726 X 1237	2576 X 1087
115"	2840 X 1285	2690 X 1135
120"	2956 X 1334	2806 X 1184
125"	3071 X 1382	2921 X 1232
130"	3186 X 1431	3036 X 1281
135"	3302 X 1480	3152 X 1330
140"	3416 X 1528	3266 X 1378
145"	3531 X 1576	3381 X 1426
150"	3646 X 1625	3496 X 1475
160"	3873 X 1721	3723 X 1571
170"	4120 X 1825	3970 X 1675
180"	4347 X 1921	4197 X 1771
190"	4594 X 2025	4444 X 1875
200"	4821 X 2121	4671 X 1971

* Max screen size with Evo3D is 190"

For 200" screens, rear projection or Acoustic Vision must be used.

The size of your scope screen will be determined by the room length. This is because the light beam from the projector must fit through the glass in the anamorphic lens. On the following page we have outlined the throw ratios required for popular 1080P Projectors. Seating distance, of course, also determines screen size. See the following page for a more in-depth look.

Scope Screen sizes and projector distance requirements with an Anamorphic lens in place.

If you plan to use an anamorphic lens in your setup, you will need to ensure the projectors zoom is at 30% or less of the max allowable zoom for each model. 30% is being used for the Mk3 lens. To work out what 30% of your projectors zoom equates to, please visit the Projector Central Calculator PRO here: <http://www.projectorcentral.com/projection-calculator-pro.cfm>

Why? Because the lightbeam leaves the projector in a V shape and must be narrow enough to fit thru the front of the anamorphic glass.

The following table will outline Cinemascope screens from 120 to 150 inch using most of the popular 1080P Projectors on the market here in Australia.

Remember, for a CIH scope setup, the room length and projector distance will play a crucial role and will determine your screen size. This is also referred to as the Throw Ratio.

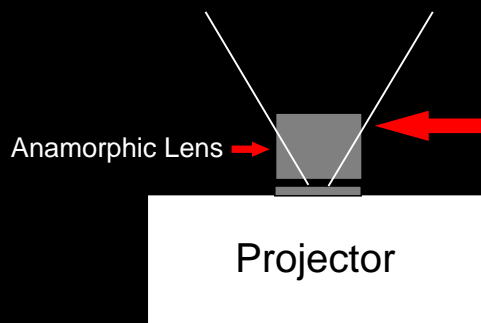
MINIMUM DISTANCE FROM FRONT OF PROJECTORS LENS TO SCREEN							
SCOPE SCREEN SIZES >	120"	125"	130"	135"	140"	145"	150"
PROJECTOR MODELS							
JVC HD550, 950	4.5	4.67	4.85	5.05	5.2	5.42	5.6
BenQ W6000	4.5	4.62	4.8	4.99	5.15	5.34	5.52
Infocus SP8602	4.15	4.32	4.52	4.66	4.81	4.99	5.15
Mitsubishi HC6800	4.07	4.23	4.43	4.59	4.72	4.91	5.07
Epson TW5500	4.61	4.81	5	5.21	5.35	5.58	5.73
Sanyo Z3000	4.46	4.62	4.84	5	5.18	5.39	5.56

NOTES: Distances are from FRONT of Projectors lens to the screen.

Add the depth of your projector model plus enough room for airflow and cables to check if you have enough room length for your desired screen size. If room is length restricted, you will need to scale down your screen size or use a 16:9 screen.

Example: JVC Hd550 is 480mm deep and has no cables on the back (they are on the side). Room length required is approx 5.0 metres for a 120 scope screen.

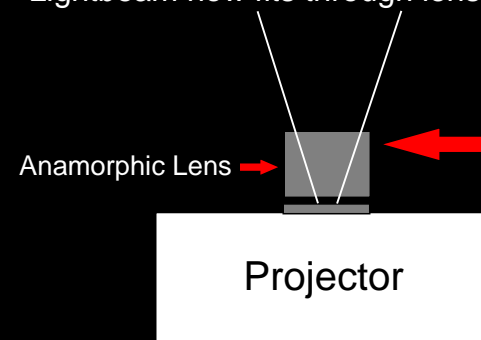
Lightbeam too wide to fit through lens glass



INCORRECT SETUP.

Either projector is too close to screen or screen size is too big. Solution - Move projector back or reduce screen size, or both.

Lightbeam now fits through lens glass



CORRECT SETUP.

Lightbeam now fits through front optic of the lens. Result: No vignetting.