Selecting the Right Screen

Wednesday, 13 February 2008
Last Updated Wednesday, 13 February 2008

SELECTING THE RIGHT SCREEN

How often do we buy a projection screen? For most it is only once in a few years. For traders though its almost every day. Deciding on which screen to use or to recommend to a user is therefore as important as enjoying it for the years ahead.

TYPE OF SCREEN

The first thing we need to consider is, how will the screen be used. There are some basic categories of uses which we can commonly identify:

- Mobile
- Fixed Manual Roll-Up
- Fixed Motorized Roll-Up
- Fixed Permanent
- Rear Projection

Once we have identify how the screen will be used the next thing to decide upon is the size of the screen.

SIZE OF SCREEN

Of course we are free to choose our screen size perhaps one that is large enough to cover the entire wall area, but as a general guide, the height of the screen should be 1/6th of the distance between the screen surface and the last row of audience. The distance between the screen surface and the first row of audience should ideally be twice the height of the screen.

We must also consider the height of the screen from the floor. Usually this is about 4 ft or 1.2 meters because that is the average height of a seated adult. However in some cases where there is no obstruction in the line of sight then we are free to determine this height.

Now that we have calculated the height of our screen we shall proceed to calculate its width.

FORMAT

All screens are produced according to the formats of projecting devices.

The most common formats are:

(width : height : diagonal)

- Square Format (1:1: 1.41)
- Video Format (4 :3:5)
- HDTV Format (16: 9:18.36)

Most LCD projectors use video format while some new models have HDTV format capability. It is always better to use a screen that fits exactly to the projection size. Where multiple formats are used we should choose the biggest of them all.

SCREEN SURFACE

The best suitable screen surface depends on many factors among them are, the lighting environment, projector brightness, audience sitting arrangement and method of projection (front or rear). It is not possible to generalize a rule but knowing what we want and the properties of each surface (as described in the next segment) will help us to make a better decision.

SCREEN BORDERS

Black borders are important to a screen because it enhances the perceived image but it is not always necessary. Refer to the specifications segment for more information on size of borders for each model and size of screen.

Units of Measurement

It is both interesting and important to note that the screen industry uses the imperial system of measurement and not metric units.

In case you are unfamiliar with using feet and inches, the following conversion rates may be useful.

1 inch = 25.4 millimeters = 0.254 M

12 inches = 1 foot

To convert 100 inches to Metres simply use the conversion ratio:

100 x 0.254 = 2.54M

Example :

We want a screen where the height is 63 inches designed for Video Format.

What should the width be?

Width = 63 / height ratio X width ratio

= 63 / 3 x 4

=84 inches

Example :

We need a 100 inch diagonal screen in HDTV format.

Height = 100 / diag. Ratio X height ratio

=100 / 18.36 x 9

=49 inches

Width = 100 / diag. Ratio X width ratio

=100 / 18.36 x 16

=87 inches