**Selecting a Home Theater Screen**

***Goal***

To display the best picture possible. Variables affecting screen selection: size of the room and placement of the screen, size of screen, seating position, projector being used, and light control in the room.

***Type of Screen***

A screen can be either fixed or motorized. In a dedicated theater the screen is usually fixed. However, some rooms may require the screen to be out of the way when not in use necessitating a motorized screen.

***Screen Geometry or Aspect Ratio***

TV has a aspect ration of 16:9 or 1:1.78, while movies have an aspect ratio in the neighborhood of 1:2.40. If you watch a lot of TV shows, use a 16:9 screen. If you are a movie buff, use a 1:2.40 screen.

***Screen Gain***

Screens have a property called gain. Gain is a measure of how the screen reflects light back to the viewer. In a dark theater we typically employ screens with gains of 0.9 to 1.3. As the gain increases, the cone of light, or optimal view area, becomes more concentrated, i.e., off-axis viewing is dimmer than when looking straight at the screen. For that reason, we typically do not use screens with a gain greater than 1.3. High-gain screens have three potential issues: hot spotting (unevenly reflecting light back to the viewer), reduced optimal viewing area, and uneven reflectance of the various colors of light (red, blue green).

***Screen Size***

There are two industry groups that make suggestions regarding proper view distance (view angle): SMPTE and THX. They suggest view angles of 30 degrees and 36 degrees, respectively. Quite frankly that is too tame. We have built theaters with 60-degree field of view, and the people have been amazed. To see what view angle you feel most comfortable with, stop by our showroom and sit in the various rows to see what resonates with you.

***Screen Quality (manufacturing precision)***

The screen in an integral and critical part of the Project / Screen system. No, you can’t shine the projector on a white wall! Invest your money in a good screen.

***Things to Avoid***

* Choosing too big a screen for the light output of the project resulting in a dim, lifeless picture
* Choosing too big a screen for the seating position resulting in an uncomfortable viewing experience
* Buying a budget screen. If you do this, you are throwing away your project image quality.
* Using a non-ALR (Ambient Light Rejecting) screen in a room without total darkness.

***Conclusion***

Choosing the right screen depends on

* The room;
* The seating position; and
* The projector.

For additional resources, please visit our website’s Knowledge Center. Here you will find several articles on home theaters. Additionally, please check out our gallery of home theater photos. There, you can find a series of 19 photos that chronical a home theater install from start to finish.

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Tom Curnin, the owner of Bravo AV, is a CEDIA Professional Designer, THX certified professional home theater Level 1, and Home Acoustic Alliance trained to Level II.

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