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Currently, we have:

Information on visual displays

- [Our "Angles of View" series](#)

And our instructional guide...

- [Guide to Selecting Front Projection Screens](#)

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Da-Lite offers a wide array of screens each with a choice of projection surfaces. Selecting the right combination to meet your needs is important for optimum results. The following pages offer guidelines for selecting a screen that suits your application. Although these recommendations will work in most situations, each must be looked at not as a strict rule, but rather as a guideline for determining your actual needs based on your own situation.

For additional help in selecting screens, contact Da-Lite for the free publications "Selecting Front Projection Screens for Today's Presentation Media Applications" or "Selecting Rear Projection Screens for Today's Presentation Applications". Of course, your Da-Lite Sales Partner is also happy to assist you.

Four Steps to the Right Screen

1. Pick the type screen that best suits your particular needs. For example, choose from front projection or rear projection screens in either portable, wall or ceiling mounted models in either manual or electric versions or rear projection. Generally, if your projection application is permanent, then wall and ceiling screens are your best choice. If, however, you find your needs require moving the screen to different locations, then a portable screen is a better alternative.

2. Determine the optimum screen size based on room dimensions, planned audience seating size and arrangement. The rule of thumb is to fit the screen to the audience - not to the projector. Da-Lite recommends the following formula for determining screen size:

- Screen height should be approximately equal to 1/6 the distance from the screen to the last row of seats, allowing text to be read and detail to be seen in the projected image.
- The bottom of the screen should be a minimum of 4 feet above the audience floor allowing those seated toward the rear of the audience to see the screen. This may require additional screen "drop" for ceiling hung screens.

3. Select the appropriate format for your projection application. Common formats are as follows:

| Common Applications | Aspect Ratio Width/Height |
|---------------------------------------|---------------------------|
| NTSC Video | 1.33 |
| PAL Video | 1.33 |
| HDTV Video | 1.78 |
| Letterbox Video | 1.85 |
| Cinemascope | 2.35 |
| 35 MM Filmstrip | 1.32 |
| 2x2 Standard 35MM Double-Frame Slides | 1.50 |

4. Choose the screen surface that best suits your projection and viewing requirements. For your convenience, the front and rear projection pages provide descriptions and performance characteristics for each front and rear screen surface. If the screen will be used for multiple projection methods, choose the screen surface that meets the requirements of the lesser performing projection method. For example, if using a slide projector and a video projector, choose the screen surface for the video projector since its light output is generally less than a slide projector.

- [Front Projection Screen Surfaces](#)
- [Rear Projection Screen Surfaces](#)

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Introduction

As long as we live in an imperfect world, we will always be faced with presentation problems, such as [ambient light](#), limited room configurations and budget restrictions. All of these problems need a solution. As the educational leader in our industry, Da-Lite is always searching for ways to present solutions. That is why we developed "Guide to Selecting Front Projection Screens."

Da-Lite offers a wide array of screens, each with a choice of projection surfaces. Selecting the right combination to meet your needs is important for optimum results. This manual will guide you through the selection process step-by-step to select the right screen fabric for any application and projection method. Da-Lite makes it easy by giving you all the information you need to fully understand the requirements of your individual application followed by an exclusive decision matrix that actually recommends the right fabric by answering a few easy questions.

The screen fabric recommendations contained in this manual are based on Da-Lite's years of experience as the leader in projection technology. These recommendations take into account all major projection methods and applications such as home theater. You can expect Da-Lite to add to these recommendations in the future as technology and more options become available.

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Getting The Most From This Manual

Three Steps In Selecting The Right Screen Material

Although the thought of choosing the right front projection fabric may seem intimidating it's actually a straightforward process. Da-Lite makes it easy with its unique matrix approach used in this manual. Please keep in mind that it may be preferable to use rear projection technology depending on your application. Contact Da-Lite Screen for its Selecting Rear Projection Screens manual for more information.

There are three basic steps in selecting the right screen fabric:

1 UNDERSTAND THE PRESENTATION MEDIA APPLICATION

One, understand the Presentation Media Application that you plan to address. Simply read the first section titled "Typical Presentation Media Applications for Front Projection Screens". Determine which application scenario best describes your situation. Then, analyze the problems and situations identified for your application that must be considered in selecting a screen fabric that meets your special requirements.

2 COMPLETE THE SELECTION CRITERIA CHECKLIST

Two, complete the selection criteria checklist based on the specifics of your application, projection method, lighting conditions, room setting, audience seating, etc. In all, there are six important criteria to be addressed.

3 COMPLETE DA-LITE'S DECISION MATRIX

Three, with the completed checklist in hand, answer the questions in Da-Lite's exclusive decision matrix for the projection method involved. This will lead you to a specific or alternative screen fabric that, based on your application and situation, will provide the best results. That's all there is to it. Again, if in doubt, feel free to contact Da-Lite directly. Our experienced Sales Partners are trained to help guide you through the process.

After you have selected the screen fabric, you'll need to choose a screen product by considering the required physical characteristics of the screen such as size, operation (i.e. fixed frame, manual roll-up or electric roll-up), and mounting (i.e. ceiling mounted, wall mounted or floor mounted). Da-Lite offers the largest selection of screen models in the world. Consult any authorized Da-Lite dealer for additional information or contact us directly for the name of the dealer nearest you.

Refer to the section on screen fabric descriptions for further definition of screen fabrics and their properties. Also, consult the glossary for terms commonly used when discussing projection screens and uses in this manual.

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Typical Presentation Media Applications for Front Projection Screens

Take a projector, put a screen in front of it, turn down the lights and you have a presentation. If only it was that simple. Unfortunately, there are many other considerations, both physical and environmental that affect the quality and viewability of a presentation. We call these Presentation Media applications.

Today's typical Presentation Media applications fall into the following four distinct categories - Each with its own unique requirements and problems. The optimum viewing solution demands the projection surface fully address these requirements and problems.

If your particular application is not described here exactly, consider the relevancy of problems and special situations identified in other applications as a guide to using the selection criteria list. Choose the application that best describes your situation.

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Typical Presentation Media Applications for Front Projection Screens

HOME THEATER/ENTERTAINMENT

This growing application brings the realism of the "cinema" home. You'll find a wide spectrum involved in this application from video enthusiasts who build dedicated home theater rooms to movie fans that convert their living rooms or dens into mini-theaters.

Consider these characteristics and problems typically found in Home Theater applications:

Home Theater Characteristics

- Typically this application uses some type of video projection but could include some film projection. Popular today are the less expensive, albeit lower power, [LCD](#) projectors combined with surround sound audio equipment utilizing [Dolby Pro Logic™](#).
- The application objective is to attain the highest degree of visual and audio realism. The desire is to make the audio-viewing experience as close as possible to the feeling experienced at a modern-day cinema.

Special Problems or Situations

Typically, you'll find most home theaters have one or more of the following problems.

- Lighting conditions may not always be controllable. For example, windows, skylights and entry ways can allow stray or direct light into the room, negatively affecting image quality.
- Screen surface could be easily soiled or damaged by children, pets, etc.
- May require wide or narrow angle of view depending on room configuration.
- Screen surface must remain taut to maintain resolution and eliminate disturbing shadows when projecting with video devices like [LCD](#), [DLP](#) and [CRT](#) based video projectors.
- Could possibly require a variety of projection aspect ratios i.e. [HDTV](#), letterbox, standard broadcast television.

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Typical Presentation Media Applications for Front Projection Screens

CLASSROOM/BUSINESS TRAINING

This classic application is a key communication method in today's hectic business world. Communicating effectively in mass enables companies to get employees up to speed quickly. Likewise, in the educational setting, educators are finding an emphasis on visual communication is not only favored by students but as importantly, is far more effective in sharing information and concepts.

Although business and educational settings are worlds apart, their Presentation Media characteristics and problems are common.

Classroom and Business Training Characteristics

- Any setting where a medium size group of people are seated around an instructor using presentation media as the focal point for communicating ideas or information.
- Generally, participants take notes and refer to additional reference materials requiring higher ambient lighting.
- Interaction and eye contact between the instructor and the student is vital in teaching and maintaining audience interest.

Special Problems or Situations

- Lighting conditions may not always be controllable to the extent desired. In both the educational and business training areas, rooms may be multi-purpose and have windows that allow stray light to penetrate.
- Presentations requiring note taking or reference to materials dictate higher ambient room lights.
- May require wide or narrow angle of view depending on room configuration.
- A variety of projection methods i.e. video, overhead or slide may be used on the same screen.

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Typical Presentation Media Applications for Front Projection Screens

BUSINESS/BOARDROOM STYLE MEETINGS

The cornerstone of business is the "meeting." Without meetings, vital information is slow to be communicated. The result is quick paralysis of an organization. The better the ability to communicate clearly, quickly and effectively, the better the results.

In this application, you'll find a wide array of room configurations. Established meeting rooms with built-in presentation capabilities are ideal but not as typical as standard rooms outfitted with portable projection devices with screens made to fit. Either way, the physical and environmental characteristics of both have similar objectives.

Business/Boardroom Style Meeting Characteristics

- Any group meeting where the main emphasis is imparting information and not for the express purpose of interacting with the audience during the presentation.
- Typically these presentations are made in rooms designed or earmarked for presenting. Lighting and ideal seating arrangements can be controlled.
- Although this application generally involves smaller groups, the size of the audience can vary greatly, limited only by the physical size of the room.
- A wide range of projection methods are typically used alone or in combination - from standard transparency or [LCD](#) panel video, overhead or slide projectors.

Special Problems or Situations

- A variety of projection methods (i.e. video, overhead or slide) may be used on the same screen, requiring a screen surface that addresses the needs of all without severely compromising the image quality of any one method.
- Depending on the projection method and room size, image [brightness](#) may suffer.
- The audience is typically closer to the screen than optimally recommended, dramatically exaggerating the [viewing angle](#) for some audience members

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Typical Presentation Media Applications for Front Projection Screens

AUDITORIUM/LARGE GROUP MEETINGS

Presentations to a large group of people can be an exciting and impressive Presentation Media application. Yet, it is in this application more than any other, that selecting the right screen is critical to satisfying all audience members with a quality image.

In this application, you'll find auditoriums with built-in permanent projection rooms, large multi-purpose rooms (like hotel banquet/function rooms) where flexibility requires portable projection methods and impromptu or infrequent presentations in large areas not specifically designed for presentations (typically found in businesses).

Auditorium/Large Group Meeting Characteristics

- Typically large numbers of seated or in some cases, standing audience members where room size usually dictates a wide [viewing angle](#).
- Very limited interaction between presenter and the audience, if any.
- The need for a large image size requires a projection method/source with substantial lumen output.

Special Problems or Situations

- Depending on seating position, image quality may not be ideal due to wide angle and/or distance from screen.
- Although film projection is generally used with high lumen output, video is also likely to be used with some compromise due to lower light output.

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Selecting the Right Front Projection Screen Surface

Da-Lite Screen has identified six basic criteria for selecting the right screen surface. Each criteria is designed to provide characteristics a screen must possess to meet the applications objectives as discussed earlier in this manual.

These Presentation Media criteria are as follows:

CRITERIA #1 - PROJECTION METHOD

Determine the primary type of projection method to be employed. If multiple projection methods are to be used equally, determine which one has the most demanding requirement and use that as your selection criteria. For example, in the case of an application requiring a front projection screen to display both [LCD](#) Video and slide projection, use [LCD](#) Video as the selection requirement due to its need for a screen surface with high [gain](#) qualities.

Video

Light Valve Technology - A video projection system generally using a high power xenon arc lamp to project a bright (up to 7000 lumens) video image by using an electron beam to scan and construct the image. The image is projected through a single interchangeable lens for precise color registration and easy set-up.

CRT Technology - A common video projection system using three-tube projectors (one for red, green and blue) with a fixed focal length and light output of approximately 600 to 1600 lumens. Alignment of the three tubes is critical for best resolution and color rendition.

LCD Technology - This low-cost technology uses a conventional light source, usually a halide arc lamp, to project an image by passing light through three internal liquid crystal displays -- one each for red, green and blue. Each image is then combined by a series of mirrors into a single image. Resolution is lower than [CRT](#)-based projectors and produces a lower light level at around 600 lumens.

DLP Technology - This technology is based on the Digital Micromirror Device™ (DMD™) which uses over 500,000 microscopic mirrors on the [SVGA](#) chip to reflect images on screen.

35MM Slide transparency - One of the most popular methods of displaying single-frame photography. Like other portable film projection methods the slide's continuous tone properties and the projector's high light output (varying from 1000 to 6000 lumens), provides an excellent image -- showing fine detail and exceptional color rendition.

Overhead\Opaque Projection

Overhead transparency - In business and educational settings, the overhead projector has become an indispensable projection choice. Its flexibility, ease of use and high output light source of approximately 3000 lumens provides a projection method individual presenters can use in their own personal manner.

Overhead [LCD](#) panel - Same method of projection as the overhead transparency but light

is projected through an [LCD](#) panel connected to a personal computer. The number of screen pixels and screen mode (i.e. [VGA](#) in the panel) determine the resolution quality of the image and color rendition. Generally, [ambient light](#) should be kept to a minimum for best image quality. Light output is greatly reduced because light is projected through a number of layers.

Opaque - Designed to project original documents and small three-dimensional objects through reflectance. It has a relatively low light output of approximately 150 lumens, making it necessary for a higher [gain](#) screen or to moving it closer to the screen.

3D Projection

Three-dimensional and specialty projection - The polarization of images to produce three dimensional images substantially reduces light output dictating a much higher [gain](#) screen than any another form of projection. Also, some front projection screen surfaces actually disrupt the polarization effect.

Some special video projection situations require a higher contrast due to high [ambient light](#) conditions. In these cases, a curved screen is generally recommended.

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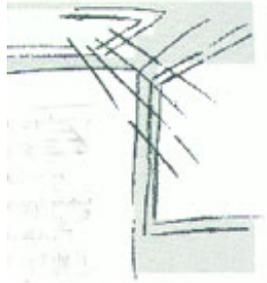
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CRITERIA #2 - AMBIENT LIGHT CONDITIONS



Part A - Determine whether or not light conditions are controllable to minimize [ambient light](#) when needed

-Controlled light assures no substantial stray light is allowed to enter the room that would increase [ambient light](#) levels to a point where the projected image is affected.

Part B - Determine if uncontrolled light is directed at the screen causing the projected image to "washout".

An example is uncontrolled light from sources such as concealed ceiling lights directed on to the surface of the screen.

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CRITERIA #3- DISPLAY BRIGHTNESS

Use the following simple formula to determine the [brightness](#) (in foot-lamberts) of your display.

$$\frac{\text{ANSI lumens of projector}}{\text{Square footage of screen}} = \text{foot-lamberts}$$

Example:

$$\frac{1200 \text{ ANSI lumens}}{48 \text{ square feet (6 x 8 screen size)}} = 25 \text{ foot-lamberts}$$

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CRITERIA #4- ROOM CONFIGURATION/SIZE

Determine if the seating area will require audience members to view the projected image from a narrow (Figure 1) versus a wider (Figure 2) angle of more than 30 degrees from either side of the center of the screen. If the room configuration (is more horizontal than vertical), it forces audience members to view the projected image from an angle greater than 30 degrees and a screen fabric providing a greater [viewing angle](#) is required.

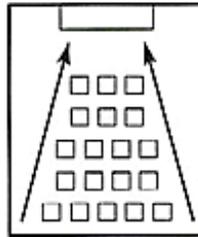


Figure 1

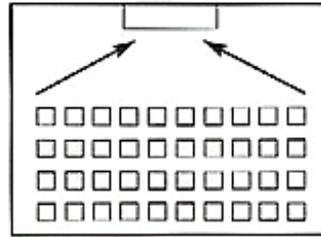


Figure 2

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CRITERIA #5- PROJECTED IMAGE MAKE-UP

Determine if the projected image is one or more of the following:

- a) Conventional video images - Generally speaking this is an image that does not contain very fine detail, so resolution is not as critical.
- b) Continuous tone images - Found in all slide film projection methods. Provides the best image in terms of resolution and color reproduction.
- c) Digital or pixelized data with fine detail, (i.e. textual information as found in [LCD](#) and [CRT](#) video projection devices including [LCD](#) panels) require higher resolution to project characters with clarity.

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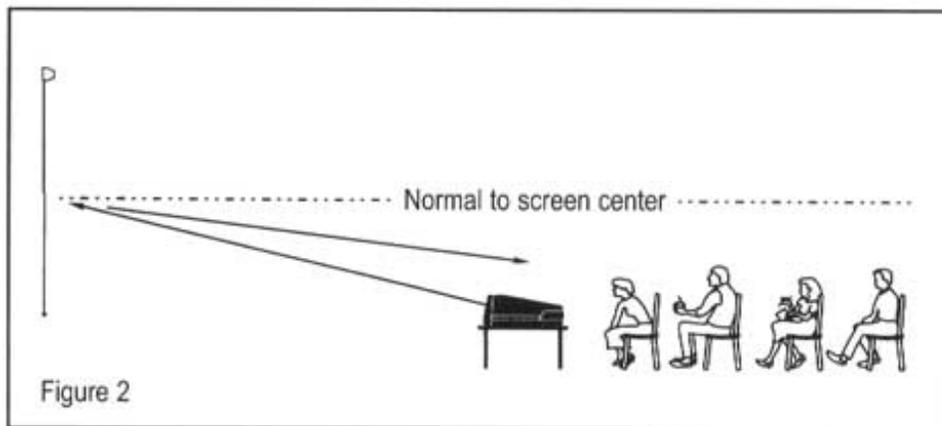
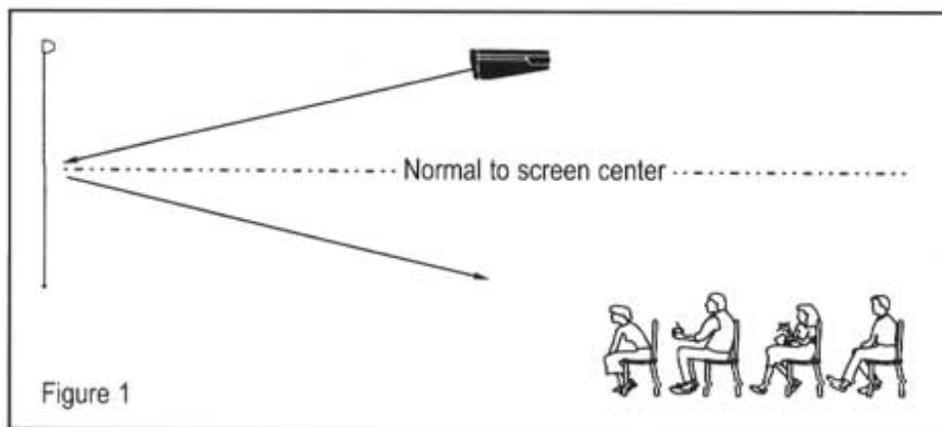
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CRITERIA #6-Projector Placement

Determine if the projector will be placed perpendicular to screen center.

Whenever the projector and the audience are on opposite sides of the normal, use a screen that is reflective. (Figure 1). Whenever the projector and the audience are on the same side of the normal, use a screen that is retro-reflective. (Figure 2).



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CRITERIA #7- SCREEN MAINTENANCE

Determine if the screen surface will be subjected to one of the following

Potential soiling or damage from inadvertent or constant handling. Typical situations are in high traffic areas where people may accidentally touch the screen surface or in public or educational settings where the screen surface could be abused. Also, in settings where there's a problem with airborne debris and dust.

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Selection Criteria Checklist

For ease in collecting the criteria for selecting the proper front projection screen fabric, use the following checklist to record your answers. Then, click "Calculate Suggested Screen Fabric" to complete the Decision Matrix

Name

Date

September 12, 2002

Criteria #1 - Projection Method

Video Technology

[CRT](#)

[LCD](#), [DLP](#), D-ILA, LCOS

Film Technology

Slide Transparencies

Film

Overhead Technology

Overhead Transparency

Three Dimensional

3D

Criteria #2 - Ambient Light Conditions

Part A

[Ambient Light](#) **IS** Controllable

[Ambient Light](#) **IS NOT** Controllable

Part B (if ambient light **IS NOT** controllable)

[Ambient Light](#) **DOES NOT** Affect Screen Image

Uncontrollable **Light DOES** Affect Screen Image

Criteria #3 - Display Brightness

Your display has **25 OR MORE** foot-lamberts

Your display has **LESS THAN 25** foot-lamberts

Criteria #4 - Room Configuration

Audience members will be seated **30° OR MORE** from the center of the screen

Audience members will be seated **LESS THAN 30°** from the center of the screen

Criteria #5 - Projected Image Make-Up

Conventional Video Images

Continuous Tone Images

Digital Text or Pixeled Data

Criteria #6 - Projector Placement

Projector and audience **ARE** on the same side of normal

Projector and audience **ARE NOT** on the same side of normal

Criteria #7 - Screen Maintenance

Screen surface **IS** subject to abuse or constant handling

Screen surface **IS NOT** subject to abuse or constant handling

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[glossary](#)

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Available Screen Fabrics:

Matte White

One of the most versatile screen surfaces and the number one choice for situations where ambient light is controllable. Its surface evenly distributes light over a wide viewing area. Colors remain bright and lifelike, with no shifts in hue. Screen surface can be cleaned with mild soap and water. Flame retardant and mildew resistant.

Gain - 1.1 Viewing angle -50°

Video Spectra™ 1.5

This screen surface is especially designed for demanding video and overhead LCD panel projection applications where a balance of higher gain and greater viewing angle is required. The special Pearlescent surface may be cleaned with mild soap and water. Flame retardant and mildew resistant.

Gain - 1.5 Viewing Angle - 35°

Glass Beaded

A glass beaded screen surface has the ability to achieve a higher gain by reflecting more of the projected light back along the projection axis. Glass beads impregnated in the screen's surface provide additional internal reflectance providing an unparalleled screen surface for vibrant, lifelike color reproduction at moderate viewing angles. Not recommended for areas where the screen will be subject to abuse or soiling.

Gain 2.5 Viewing Angle - 30°

Silver Matte

A uniquely designed screen surface with a specifically designed silver finish. This surface is perfect for situations where a silver surface is necessary for a polarized 3-D projection. The matte finish of this surface successfully rejects ambient light. Screen surface can be cleaned with a mild soap and water solution. Flame retardant and mildew resistant.

Gain: 1.1, Viewing Angle: 30°

Da-Mat™

A screen surface with a smooth, white, suede vinyl finish for precise image reproduction. Provides an exceptional wide angle of view with little loss of resolution. It is a highly flexible fabric and may be folded or rolled. Flame retardant and mildew resistant. Can be cleaned with soap and water.

Gain 1.1 Viewing Angle 50°

High Power

This screen surface is a technological breakthrough, providing the reflectivity of a glass beaded surface with the ability to clean the surface when required. Its smooth textured surface provides the highest gain of all types of screen surfaces with a moderate viewing

angle. Can be washed with soap and water is flame retardant and mildew resistant.

Gain - 2.8 Viewing Angle - 25°

Cinema Vision

A unique unsupported vinyl surface that offers a bright, uniform image with no color shift no matter at what angle you view the image. Can be washed with soap and water and is flame retardant and mildew resistant.

Gain - 1.3 Viewing Angle 45°

Pearlescent

A non-supported vinyl fabric, offering a higher degree of reflectivity and brilliance without loss of image quality or resolution. This surface is a good choice when producing video images with a lower output projector and where there is a high amount of ambient light present. Screen surface can be cleaned with a mild soap and water solution. Flame retardant and mildew resistant.

Gain: 1.5, Viewing Angle: 40°

Audio Vision

Designed for applications where a more realistic sound stage is desired, this fabric allows for the installation of speakers to be placed behind the surface. With virtually no sound loss and good image quality, this fabric provides the same optical characteristics as the Da-Mat surface with specially designed perforations to allow sound to pass through the screen material. Screen surface can be cleaned with a mild soap and water solution. Flame retardant and mildew resistant.

Gain: 1.1, Viewing Angle: 50°

High Contrast Da-Mat™

With a special gray surface, this screen material is designed for use with today' high output LCD, DLP, and D-ILA projectors. By lowering the black levels of the projected video image, this surface creates a more film-like image and is a good choice when video is the main source of projected information. This screen surface is best used when there is a good control of ambient light and a moderately wide viewing angle is desired. Screen surface can be cleaned with a mild soap and water solution. Flame retardant and mildew resistant.

Gain: 0.8, Viewing Angle: 45°

High Contrast Cinema Vision

Designed for today's moderate output DLP and LCD projectors, this screen surface is a great choice when video images are the main source of information being projected and where ambient light is moderately controlled. With this specially designed gray base surface and a reflective top surface, this screen material is able to provide very good black levels without sacrificing the white level output. With its enhanced black levels and brilliant white levels, this screen surface provides deep life-like colors and greater detail and sharpness to the image. Screen surface can be cleaned with a mild soap and water solution. Flame retardant and mildew resistant.

Gain: 1.1, Viewing Angle: 45°

High Contrast Audio Vision

With the same optical characteristics as the High Contrast Da-Mat material, this surface is designed to provide the viewer with a more realistic soundstage by placing speakers behind the screen and allowing the sound to be transmitted through the material. This screen surface is best used when there is good control of ambient lighting and a

moderately wide viewing angle is desired. Screen surface can be cleaned with a mild soap and water solution. Flame retardant and mildew resistant.

Gain: 0.8, Viewing Angle: 45°

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Screen surface can be cleaned.



Flame retardant.



Mildew resistant.



Number shows the degrees from the center of the axis of the screen that the projected image is brightest to the audience.



Indicates Goniophotometer reflectance readings. The higher the number, the greater the light transmitted to the audience.

Supported Fiberglass

Matte White

The most versatile screen surface and the premier choice when ambient light is controllable. It evenly distributes light over a wide viewing area while colors remain bright and life-like, with no shifts in hue.

    50°  1.1

Video Spectra 1.5

Especially designed for demanding video and overhead LCD projection applications where a balance of higher gain and greater viewing angle is required. The special pearlescent surface may be cleaned with mild soap and water.

    35°  1.5

Glass Beaded

This surface has the ability to achieve a higher gain by reflecting more of the projected image back along the projection axis. Glass beads impregnated into the screen's surface provide additional reflectance. This attribute creates an unparalleled screen surface that reproduces vibrant life-like color at moderate viewing angles.

   30°  2.5

Super Wonder-Lite

Employs a scientifically designed ridged pattern, embossed into an aluminum vinyl and textile laminate. It's free from objectionable glare and hot spots, even in partially darkened rooms. Not available on all screen types since the material needs to be tensioned.

   40°  1.8

High Power

A technological breakthrough, combines the reflectivity of a glass beaded surface with the ability to clean the surface when required. Its smooth surface offers the highest gain of all types of screen surfaces with moderate viewing angle.

    25°  2.8

Wide Power

Wide Power combines the features of a higher gain screen surface of 2.2 with a wider 45 degree viewing angle. The smooth acrylic surface may be cleaned with mild soap and water. Wide Power is only available on the Deluxe Insta-Theater and the Presenter screen lines.

 45°  2.2

Non-Supported Vinyl

Dual Vision

A unity gain flexible fabric capable of both front and rear projection. The surface is ideal for video projection where light is controllable. With its exceptionally wide viewing angle, each seat in the audience will observe a uniform, bright, sharp image with no color shift.

 50°  1.0

Da-Mat

A smooth, white, vinyl finish surface for precise image reproduction. Provides an exceptionally wide angle of view with little loss of resolution. It is a highly flexible unsupported vinyl fabric and may be folded or rolled.

 50°  1.1

Cinema Vision

A unique unsupported vinyl surface that offers a bright, uniform image with no color shift no matter at what angle you view the image.

 45°  1.3

Pearlescent

This surface utilizes an unsupported vinyl creating a very smooth Pearlescent coating that provides high reflectivity and brilliance without loss of image quality or resolution.

 35°  2.0

Screen Borders and Drop

Black masking borders are standard on all Da-Lite front projection screens except Super Wonder-Lite at no extra charge. Borders enhance the perceived brightness of an image on a screen. The human eye perceives the image to have more contrast and a sharper picture with brighter colors. Borders also allow the projected image to "bleed-off" the screen for professional appearing presentations.

Drop is also available on most Da-Lite wall/ceiling and electric screens. Drop is extra fabric added to the top or bottom of the screen to adjust the screen surface to within normal viewing heights. Drop can be specified in either black or white.

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Da-Lite offers three types of Rear Projection Screens: Diffusion, Profiled and flexible fabric screens.

Da-Lite's Polacoat Diffusion Screens offer two types of substrates, transparent acrylic (Da-Plex) or glass (Da-Glas) and choice of six extremely fine, precise optical coatings.

Da-Lite's profiled type screens feature a lens on their back surface which is formed by a series of concentric circular grooves each cut at a different angle. These grooves reduce the incident angles of light rays from the projector making more light available for transmission directly to the audience.

Flexible fabric screens are generally used for situations where portability is a prime concern. It offers high light transmission for optimal viewing.

Note: Custom gain performances are available upon request.



Screen surface can be cleaned.



Flame retardant.



Mildew resistant.



Number shows the degrees from the center of the axis of the screen that the projected image is brightest to the audience.



Indicates Goniophotometer reflectance readings. The higher the number, the greater the light transmitted to the audience.

Polacoat Diffusion Screens - Substrates

Da-Plex™

A rigid acrylic substrate for increased breakage resistance. It offers lightweight, good optical quality and good sound isolation. Standard sizes up to 9' x 18' and larger by request.

Da-Glas™

A glass substrate for long service life with high optical quality and maximum sound isolation. Standard sizes up to 10' x 20' and larger by request.

Polacoat Optical Coatings

DA-100

A neutral gray screen that provides contrast, uniformity and color rendition ideally suited for high resolution applications.

    35°  1.0

DA-150

A neutral gray screen offering an on-axis gain of 1.5, the DA-150 is a surface well suited for applications whose viewing angles are not large but which can benefit from moderate

screen gain.

    32°  1.5

DA-180

A neutral gray screen well suited for multi-image displays where bend angles from some images may be severe. It makes a good choice for audiences with a wide seating arrangement.

    30°  1.8

DA-230

An excellent choice where a balance between gain and viewing angle is needed. Ideal for situations with a high level of ambient light.

    24°  2.3

Video Vision

A special coating process generates a screen ideal for video projection under controlled light conditions. Offers an exceptionally wide field of view so each audience member will observe a uniform, bright, sharp image with no color shift.

    45°  1.0

Flexible Fabric Screens

DA-**Tex**TM

A neutral gray vinyl surface that yields excellent color rendition, image contrast, and a wide viewing angle.

    35°  2.3

Dual Vision

A unity gain flexible fabric capable of both front and rear projection. The surface is ideal for video projection where light is controllable. With its exceptionally wide viewing angle, each seat in the audience will observe a uniform, bright, sharp image with no color shift.

    50°  1.0

Profiled Type Display Screens

Da-View

Offers a bright image at a relatively wide field of view perfect for single image display.

    32°  4.0

DNP Giant Screen

This screen is a single element optical system with two active lens surfaces. The back surface is a Fresnel lens with a pitch of .5mm and the front surface is a lenticulation array with a pitch of 0.8mm.

    21°  3.0

Wide Angle Screen

This screen is a single element double profile cast acrylic with the back surface comprising a Fresnel lens and the front surface exhibiting an array of lenticulations. Fresnel grooves have a pitch of .5mm and the lenticulations have a .33mm pitch.

    32°  3.4

Graphics Screen

This screen is a double element system with four active lens surfaces. The rear element includes a Fresnel lens towards the front surface. The front element consists of a lenticular lens array. The front side has a unique wide angle lenticular array with a pitch of .33mm.

    32°  3.5

Black Stripe Screen

This screen is a double element with four active lens surfaces. The rear element is a horizontal lenticular lens on the back with a Fresnel lens on the front side. The back of the front element is a lenticular lens array with a pitch of 1.04mm - 1.2mm. The front surfaces is a black stripe system covering 37% of the screen surface for ambient light absorption.

 41°  4.0

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The special terms used in this manual and those common in discussing front projection screens are described below

Ambient light - All light in a viewing room produced by sources other than the screen.

Aspect ratio - The numeric relationship between a screen's height and width. This ratio is often defined by the selected projection medium. Hence, NTSC Video (U.S. television) has an aspect ratio of 3:4.

Bend Angle - The angle through which a projected light ray must be diverted from its original path to reach a viewer's eyes.

Borders - The black portion surrounding the viewing area of a screen.

Brightness - A viewer's subjective response to luminance.

Contrast ratio - The numeric relationship between the brightest and the darkest portions of a display expressed in foot-lamberts as a ratio of Max:Min.

CRT - Cathode Ray Tube. Same technology used in TV and computer monitors.

DLP Technology - This technology is based on the Digital Micromirror Device™ (DMD™) which uses over 500,000 microscopic mirrors on the SVGA chip to reflect images on screen.

Dolby Pro Logic™ - An audio technology utilizing a center channel (fifth loudspeaker) designed to primarily position dialogue and other information at the center of a viewing area.

Drop - The area between the top of the viewing area and the bottom of the screen housing.

Foot-candle - The fundamental unit of illumination representing the light intensity over a 1 square foot surface which is 1 foot away from a standard candle.

Footlambert - A unit of luminance equivalent to 1 lumen per square foot.

Gain - A measurement usually made perpendicular to screen center of the luminance transmitted by the screen, divided by the luminance radiating from the projector.

HDTV - Acronym for High Definition Television

Keystone - The distortion of the projected image when the screen is not perpendicular with the center line of the projected image.

LCD - Liquid Crystal Display. Commonly used in digitized projection.

Lenticular - Screen surface comprised of a geometric embossing pattern. The shape of the pattern affects view\angle performance and reflection of ambient light.

Luminance - The measured [brightness](#) of a screen, expressed in foot-lamberts.

Projection axis - The direction of an imaginary line extending from the center of the projection lens through the screen's center.

SVGA - Super Video Graphic Array. Common computer screen resolution. (800 x 600)

Throw distance - The length of the projection beam necessary for a particular projector to produce an image of a specified size.

VGA - Video Graphic Array. Common computer screen resolution. (640 x 480)

Viewing angle - The angle from a specified viewing position to the center of the screen. It is usually measured on the horizontal or on the vertical axis.

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