

2.0 Location Considerations

Contents

2.1 Placing the Projector	2-1
2.2 Lens Selection	2-2

2.1 Placing the Projector

The projector should be installed in an area free from dust and moisture. Do not place the equipment near heat-radiating appliances. Smoke and steam could adversely affect the internal components.

Carefully consider the following prior to installing the projector:

- ❑ Tilt requirements
- ❑ Projector-to-Screen Alignment
- ❑ Screen Width
- ❑ Seating Arrangements
- ❑ Lens Selection
- ❑ Physical Access
- ❑ Heat Dissipation
- ❑ Weight of the Projector

NOTE: The projector was designed to operate in the right side up position only.



CAUTION! The tilt requirement refers to whether the Projection Module will need to be tilted up or down. This needs to be determined before the Projection Module is moved into its final position.

The Projection Module must be placed into position facing the desired direction before attaching the Arc Lamp Module. Use a forklift to position the projector or roll it into position on the Projection Module casters. Space is provided to allow a forklift to get under the Projection Module. If the Projection Module is being rolled into position, the leveling feet should be fully raised (see the section on Leveling the projector) to avoid dragging or catching the “feet”. The Projection Module should be in the desired position prior to attaching the Arc Lamp Module.



CAUTION! When using a forklift to move the projector, lift from the side **opposite** (left side when facing rear of projector) the Arc Lamp Module attachment side.

Set the projector to the proper distance from the screen, as determined by the screen width and lens throw ratio (*see Lens Selection*). The Lens Dynamic Table (*see Table 2-1*) and Lens Chart (*see Figure 2-2*) will help in choosing throw distances and screen widths, based on a selected lens, or in choosing a lens for a desired throw distance and screen width.

2.2 Lens Selection

Throw Distance and Screen Width

Selecting the correct lenses for the ILA-12K is critical to obtaining an image that fits the screen. Lens types are based on two parameters: the width of the screen and the distance from the lens to the closest point on the screen (*see Figure 2-1*). These two parameters are used in the Throw Ratio Formula (*see Equation 2-1*) to determine the correct lens set for the projector installation.

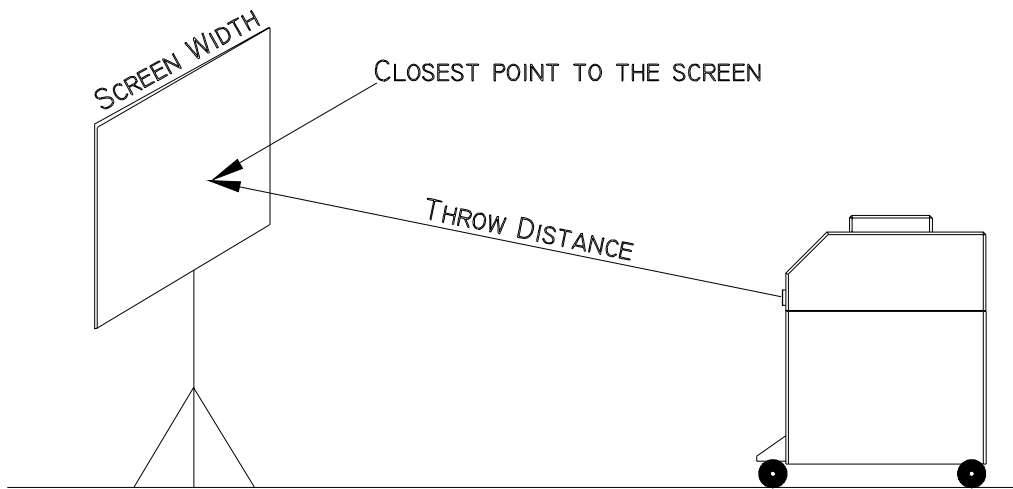


Figure 2-1 To find the Lens Throw Ratio, screen width or throw distance, use the formula below:

$$\text{Lens Throw Ratio} = \frac{\text{Throw Distance} \times 1.02}{\text{Screen Width}}$$

Equation 2-1 Throw ratio formula

When calculating the Lens Throw Ratio, if the result falls between two standard lens throw ratios in Table 2-3, drop down to the *next lower* Lens Throw Ratio to determine the proper lens set. (e.g. If the result shows a lens throw ratio of 6:1, drop down to a 5:1 lens). **Do not** go to a higher lens throw ratio or the lens set may desired may not be possible.

NOTE: The throw distance is multiplied by 1.02 to provide an additional 2%. This 2% allows for any measurement inaccuracies and manufacturing tolerances.

Screen width is the maximum picture size that can be focused. The placement of the projector must be a multiple of Screen Width x Lens Throw Ratio or greater, from the closest point to the screen. A greater distance can be corrected for by reducing the picture size within the ILA[®] device image but the picture size cannot be increased beyond the ILA[®] device image.

The Lens Chart (*see Figure 2-2*) may also be used to determine the correct lens set for the installation. Be sure to go to the next Lens line *to the left* to determine the correct lens set. Another option is to access the HJT website at www.hjt.com and download the Lens Calculator (click the Technology button and click on “click here” link) of type in the address www.hjt.com/technology/calc.html.

The Lens Dynamics Table (*see Table 2-1*) provides range specifications for the standard lenses offered for the ILA-12K.

Table 2-1 Lens Dynamics

Standard Lens types	Throw Distance	Screen width (min & max)	Length*	Max projector to screen Vert. tilt
0.885:1 <200" Diag.	5.8 ft.-11.8 ft.	6.7 ft.-13.33 ft.	0.5 in.	± 6°
0.885:1 >200" Diag.	11.8 ft.-17.7 ft.	13.3 ft.-20 ft.	0.5 in.	± 6°
2.177	13.1 ft.-65.3 ft.	6.0 ft.- 30 ft.	1.0 in.	± 15°
1.5:1	10.5 ft.-185 ft.	6.8 ft.-118 ft.	2.0 in.	± 15°
3:1	15.6 ft.-241 ft.	4.9 ft.-75.8 ft.	2.2 in.	± 15°
5:1	20.4 ft.-357** ft.	3.9 ft.-69 ft.	0.5 in.	± 15°
7:1	25.2 ft.-357** ft.	3.5 ft.-49.2 ft.	5.5 in.	± 15°
10:1	44 ft.-240 ft.	4.4 ft.-35.7 ft.	6.2 in.	± 15°

* Length=Maximum distance lens extends beyond front of projector case.

** Lenses have only been tested to 357 ft; actual distance may be longer.

Once the Lens Throw Ratio has been determined by using either the Lens Throw Ratio formula or the Lens Chart, use the Lens Options table (*see Table 2-2*) for information on ordering lenses. The ILA-12K Projector currently offers five standard lens and five lens converter options. The Lens Options table provides part numbers and various lens options. The Lens Matrix table (*see Table 2-3*) provides lens converter options that may be used with standard lens (3:1, 5:1, and 10:1) to obtain intermediate Lens Throw Ratios.

Verify that the lenses are mounted in the correct color position. Refer to Lens Interchangeability Table (*see Table 2-2*).

Table 2-2 Lens Options

Lens throw ratio	Lens color	Part number	Lens position requirements
.885:1 (Special Order)*	R, G, and B have same P/N. Specify color when ordering an individual lens.	103280 (for 8'-13.33' screen widths) 102692 (for 13.33'-20' screen widths)	Specific lens needed for R, G, or B. None interchangeable.
1.5:1	Red Green Blue	102412 102411 102410	Specific lens needed for R, G, or B. None interchangeable.
3:1	R, G, and B have same P/N. Specify color when ordering an individual lens.	900609	Specific lens needed for R, G, or B. None interchangeable.
5:1	Red, Green, and Blue	101239	RGB All interchangeable.
7:1	Red, Green, and Blue	101240	RGB All interchangeable.
10:1 (Special Order)*	R, G, and B have same P/N. Specify color when ordering an individual lens.	103342	Specific lens needed for R, G, or B. None interchangeable.

* 2.177:1 and 10:1 lenses are also available by special order. Contact JVC Digital IMAGE Technology Center for information on these lenses.

Use a 0.8 converter to create other lens options to use with the **3:1, 5:1 or 7:1** lens (see Tables 1-2, 1-3).

Table 2-3 Lens Matrix.

Effective Lens Throw Ratio	Base Lens	Converter	Comments
.885:1 (Special Order)	.885:1	None Available	For screen widths 8.0'-13.33' lens set p/n 103280*
	.885:1	None Available	For screen widths 13.33'-20' lens set p/n 102692*
1.5:1	1.5:1	None	Red lens p/n 102412. Green lens p/n 102411 Blue lens p/n 102410.
2.177:1 (Special Order)	2.177:1	None	Red lens p/n 102147 Green lens p/n 102148 Blue lens p/n 102149
2.4:1	3:1	.8 Converter p/n 103809 with adapter p/n 102686	lens set p/n 900609*
3:1	3:1	None	lens set p/n 900609*
4:1	5:1	.8 Converter. p/n 103809 with adapter p/n 102687	lens set p/n 101239.
5:1	5:1	None	lens set p/n 101239.
5.6:1	7:1	.8 Converter. p/n 103809 with adapter p/n 102687	lens set p/n 101240
7:1	7:1	None	lens set p/n 101240
10:1 (Special Order)	10:1	None	lens set p/n 103342.

* When ordering a single .885:1 lens or 3:1 lens, always specify the color the lens will be used with.

** The 3:1 lens has a smaller diameter and requires a bezel that fits over the end of the lens to help keep random light from exiting the projector and disturbing the screen.

NOTE: The .885:1, 2.177:1 and 10:1 lenses are special orders items. Allow additional time when ordering these lenses.

To use the Lens Chart, determine screen width and throw distance, and find the point where they intersect. Move to the closest lens line *to the left* of that point to find the best lens set for that application.

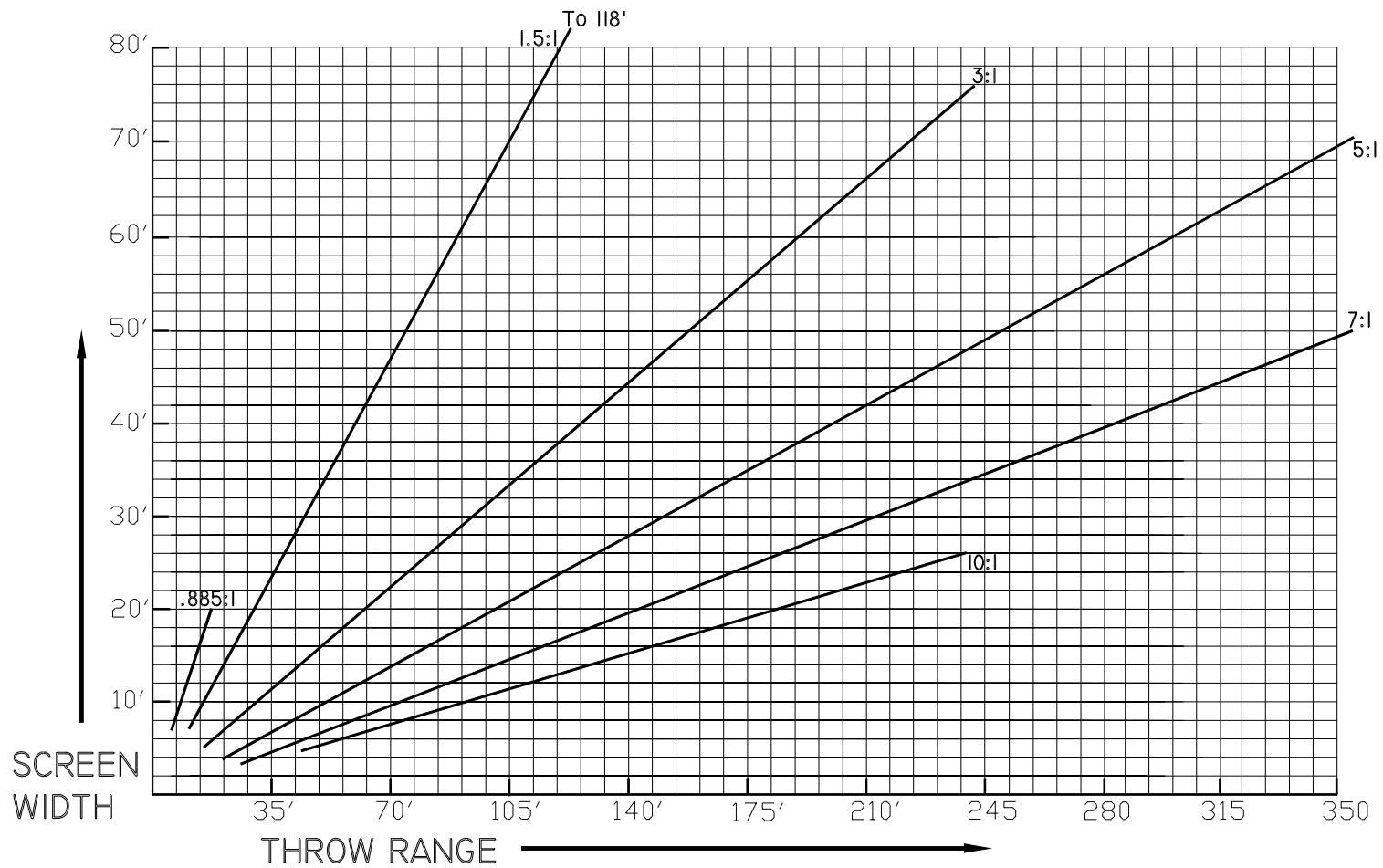


Figure 2-2 Lens Chart. Distances are to the closest point of the screen.