

ECO Spot™ 2500 User Manual

Thank you for choosing an ECO Spot™ 2500 Profile Spot. The projector part is based on a modified ETC Source Four® and most of the available standard Source Four equipment, such as rotators, changers, etc. can be utilized. 575W Discharge lamp technology paired with an ultra-efficient optical system makes it brighter, more versatile and compact than any classic 2500W gobo projector. Please read this manual before installing or operating it. Follow the safety precautions listed below and observe all warnings.



This document covers the special functionality of the ES-2500, for general/detailed info on other functions, please refer to the *ETC Source Four User manual*.

DO NOT OPERATE THE LAMP HEAD WITH THE LAMP EXPOSED. EVEN SHORT AND INDIRECT EXPOSURE CAN CAUSE SERIOUS EYE AND SKIN INJURY.

Package Contents

- ✓ Projector housing based on a modified Source Four fixture.
- ✓ Electronic ballast system with lamp head and power cord.
- ✓ Optional accessories depending on product configuration

Safety Information

- FOR PROFESSIONAL USE ONLY
- NEVER OPERATE THE UNIT WITH THE LIGHT BULB EXPOSED; IT CAN CAUSE BLINDNESS OR SERIOUS EYE INJURY.
- ONLY OPERATE THE FIXTURE FULLY ASSEMBLED
- MAKE SURE THE FIXTURE IS UNPLUGGED BEFORE CHANGING THE LAMP
- Do not look directly into the lamp, it may result in eye damage.
- This product is for not for household use, it presents risks of severe injury or death due to fire and burn hazards, electric shock, lamp explosion and falls.
- This fixture should be installed and operated only by qualified personnel with experience in lighting equipment and general electrical experience.
- Always disconnect the unit from power and allow cooling down for 20 minutes before servicing.
- Minimum distance to flammable materials = 6 ft. (2 m).
- Minimum distance to illuminated surfaces = 9 ft. (3 m).
- Don't touch the hot surface during operation, use gloves if necessary.
- Always ground (earth) the fixture electrically.

Safety Information (continued)

- Use only a power source that complies with local building and electrical codes and has both, overload and ground-fault protection.
- Do not use the fixture if the power cable or power plug is in any way damaged, defective or wet, or if they show signs of overheating.
- When suspending the fixture above ground level, verify that the structure can hold at least 10 times the weight of all installed devices.
- Verify that all external covers and rigging hardware are securely fastened and use approved means of secondary attachment such as a safety cable

Warranty

Two Years from Date of Purchase

Contact

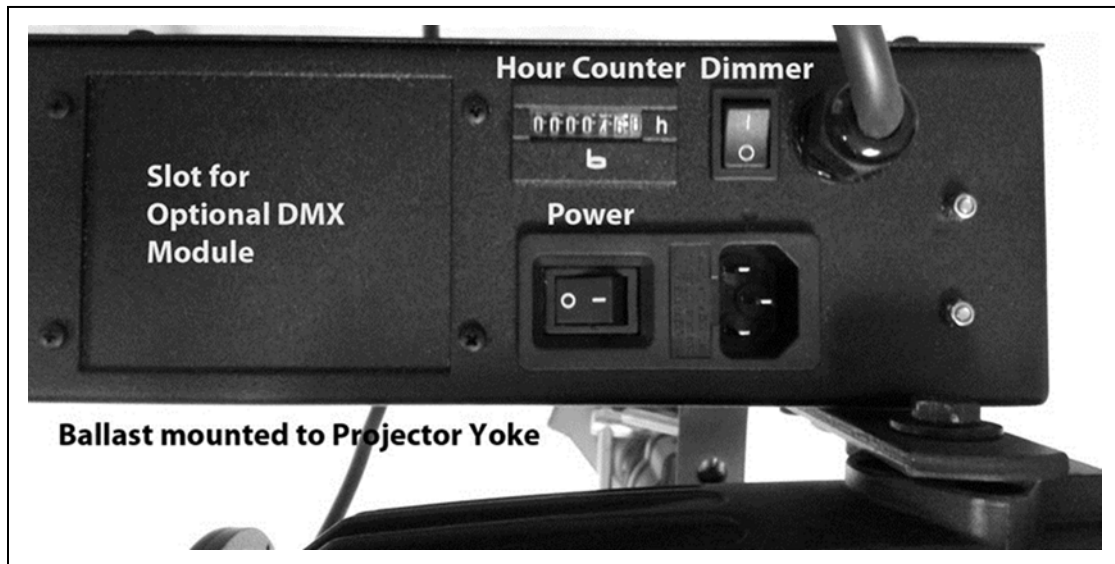
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Setup

- If not already mounted, attach the mounting plate for the lamp head to the rear of the projector with a single screw that comes with the plate.
- Attach the Ballast housing to the outside of the projector yoke on the opposite side of the yoke clutch with two screws. If the projector is equipped with two clutches (one on each side), then either remove one clutch or the ballast housing cannot be mounted to the yoke with this method. In this case it can simply be hung to the yoke or placed next to the projector with the metal bar that is provided.
- The cable between projector and ballast is fixed and cannot be extended as this would cause erratic operation.
- Place the light bulb into the lamp head.
- **DO NOT OPERATE THE LAMP HEAD WITH THE LAMP EXPOSED. EVEN SHORT AND INDIRECT EXPOSURE CAN CAUSE SERIOUS EYE INJURY.**
- Attach the lamp head to the mounting plate of the projector housing with four screws that are already screwed into the mounting plate.
- Power up the projector by pressing the switch next to the power cable of the ballast housing.
- Focus the light by moving the lens barrel back and forth.
- Follow the standard *ETC Source Four Operating Manual* for regular procedures.
- Adjust the lamp position if necessary, see "*Lamp Adjustment*".

Controls

- Power on/off. The power switch sits next to the Power Cable. Once powered on, the lamp needs a few minutes to reach full brightness, repeatedly turning the projector on/off during this period will reduce the bulb life.
- Dimmer switch. The dimmer switch next to the Lamp Cable will only operate after the light bulb reaches full brightness. Switch it to the ON position to reduce the brightness to approx. 50%
- An optional DMX module is available for controlling power on/off and dimming (see chapter "DMX Module").

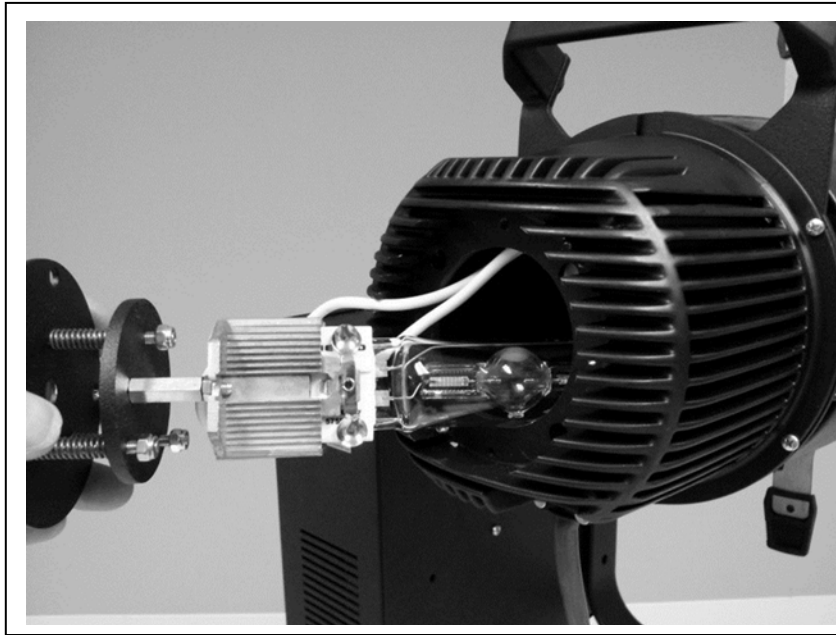


Discharge Lamp / Re-Start

- Once powered on, the lamp needs a few minutes to reach full brightness, repeatedly turning the projector on/off during this period will reduce the bulb life.
- The standard version of the ES-2500 uses cold restrike technology. This requires the lamp to cool off after use before it will turn on again. After turning off the projector, it may take around 20 minutes to restart.
- Discharge bulbs should be replaced before the end of their specified bulb life. The integrated hour counter is used as reference to determine the time that the bulb has been in use. It cannot be reset.

Loading or Replacing the Lamp

- UNPLUG THE POWER CABLE
- If the lamp head is not mounted, simply insert the bulb.
- If the lamp head is mounted to the projector, pull out the lamp holder by removing the three outer screws in the back of the lamp head. Don't turn the inner adjustment screws.
- Remove the old lamp and replace it with the new one. Don't touch the glass, if you do, wipe off any oil with alcohol or the cleaning tissue that comes with the bulb.
- Check- and adjust if necessary for an even field as described in "Lamp Adjustment".



Gobo Placement / Focusing / General Use

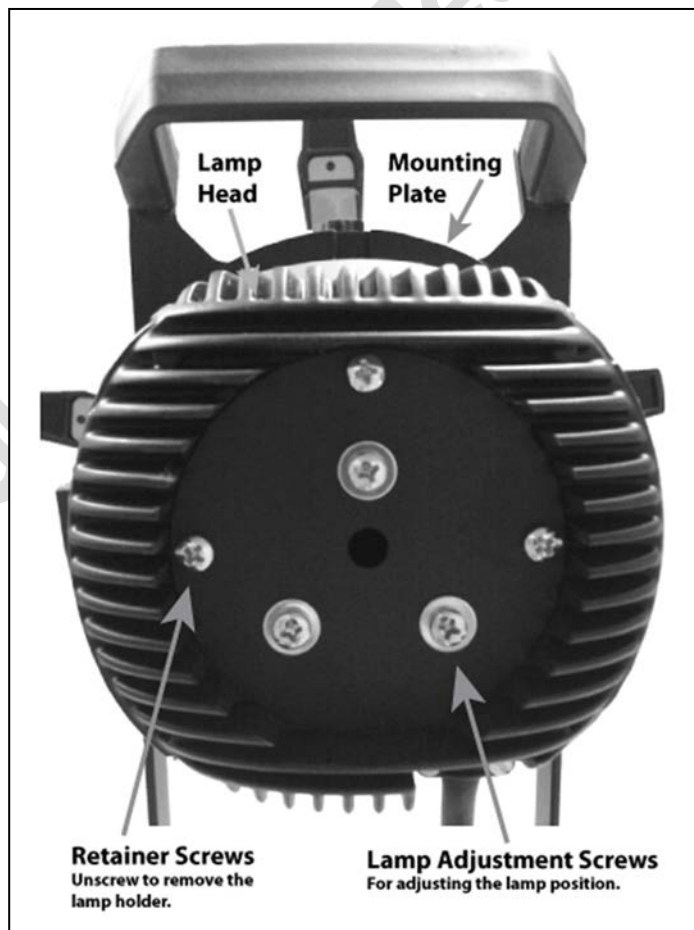
- See "Gobo Types and Dimensions" below.
- Please refer to the ETC Source Four User Manual for general instructions.

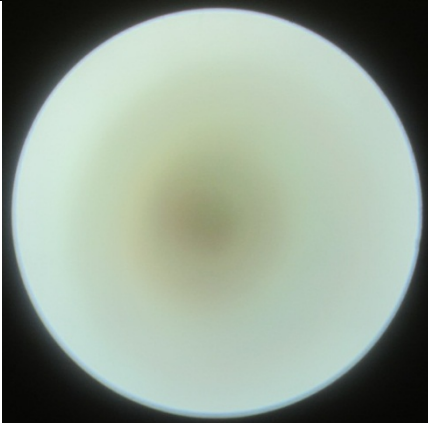
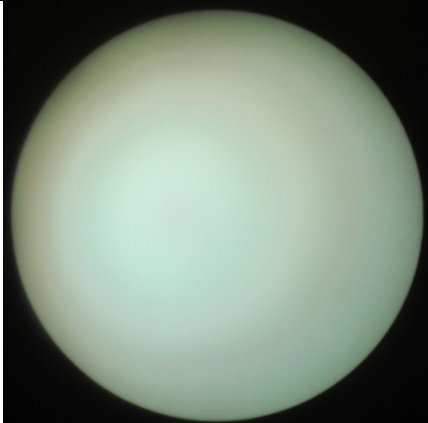
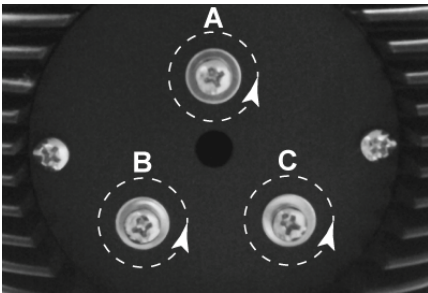
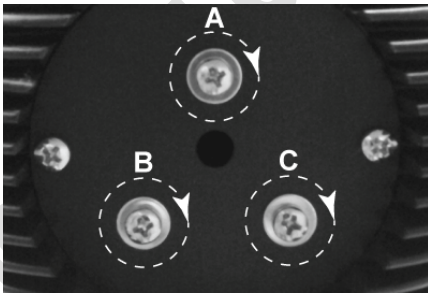
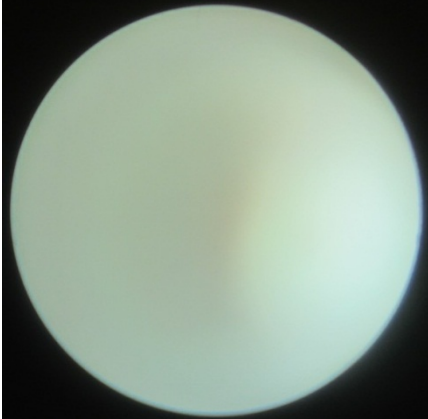
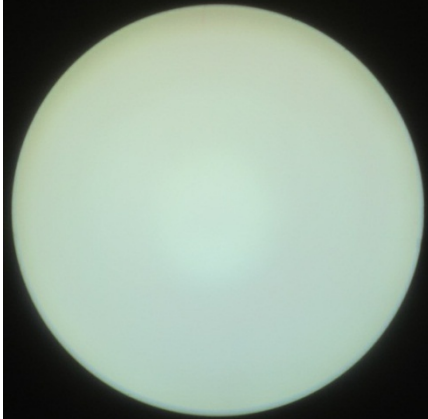
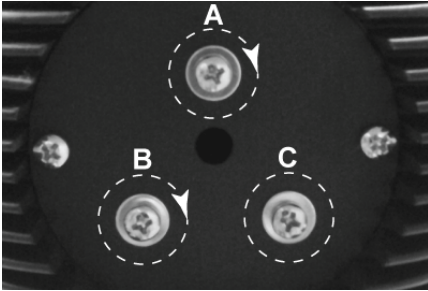
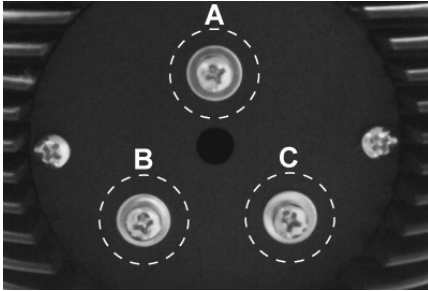
Lamp Adjustment

- The objective is to achieve an evenly bright projection field, with the center slightly brighter than the rest of the field. If this is the case, adjustment won't be required.
- The bulb position in the lamp head is pre adjusted but due to variations in the different light bulbs, it may be required to re-adjust the bulb position.

Procedure (see illustrations below)

- If available, place an empty gobo holder into the projector.
- Focus the beam by positioning the lens barrel to achieve a hard edge beam.
- Turning one screw tilts the lamp towards or away from the screw position. This is used for centering the beam.
- Turning all screws the same amount in one direction moves the lamp in or out of the reflector.
- All screws counter-clockwise: Hot Spot in center
- All Screws clockwise: Dark Spot in center
- Find a position where the dark spot just becomes an evenly bright center The smaller the contrast between center and rest of the field, the better. An extremely bright center (hot spot) can damage the gobo due to overheating.



<p>Dark Center Turn all Screws CCW</p>	<p>Light Center Turn all Screws CW</p>
	
	
<p>Light Right Turn B CW, correct vertically with A CW</p>	<p>Adjusted The center is slightly light, which is ok</p>
	
	

Recommended Lamps

Long Bulb Life	Max. Brightness
<p>Osram HSR 575 Jenbo NSK 575 Average Bulb Life: 2,000h Color temperature: 6,000 K Color Rendering Index CRI: 75 Luminous Flux 43,000lm Base: GY9.5</p>	<p>Philips MSR 575/2 Osram HSR 575W/72 Jenbo NSK 575/2 Average Bulb Life: 1,000h Color temperature: 7,200 K Color Rendering Index CRI: 80 Luminous Flux 49,000lm Base: GY9.5</p>
<p>Philips MSD 575 Average Bulb Life: 3,000h Color temperature: 6,000 K Color Rendering Index CRI: 75 Luminous Flux 43,000lm Base: GY9.5: GY9.5</p>	<p>Osram HSR 575/60 Average Bulb Life: 1,000h Color temperature: 6,000 K Color Rendering Index CRI: 85 Luminous Flux 49,000lm Base: GY9.5</p>

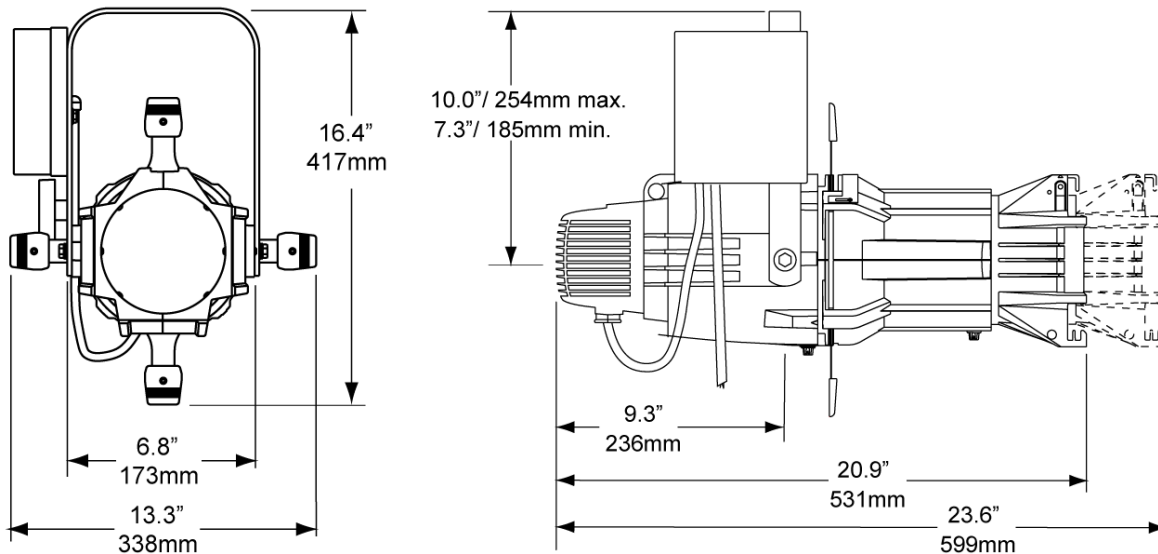
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Specifications

Line Voltage: 90-264V, 47-63Hz, 700W
Ambient Operating Temp. : -13 to 122°F (-25 to 50°C)
Ballast type: Electronic, Dimmable to approx. 50%

Dimensions:

With Standard Lens 19, 26, 36, 50, 70, 90 degree (variations possible, refer to ETC Source Four dimension specifications for other lenses or optional equipment):



Weight: 28 - 40 lbs (depending on configuration)

Gobo Types and Dimensions

Metal or Glass Gobos and Dichroic filters.

Due to the extreme heat on the gobo, we cannot guarantee heat resistance of gobos manufactured by other vendors than Gobosource. Ask your gobo vendor. Please always explicitly specify this projector model when ordering.

No warranty for breakage due to poorly adjusted field (hot spots). See "Lamp Adjustment".

Fits B-size gobos

Outer Diameter (OD): 86mm
Max. Image Diameter (ID): 66mm (for glass gobos we recommend max 60mm)
Max Thickness: 2.7mm in Gobo slot, 4mm in Iris Slot

Projection Lens Options

The ES-2500 takes all regular Source Four projection lenses, which allows for an extreme projection range from a few feet to 2000 ft in dark conditions. *Please refer to the Gobosource Projection Chart* for details.

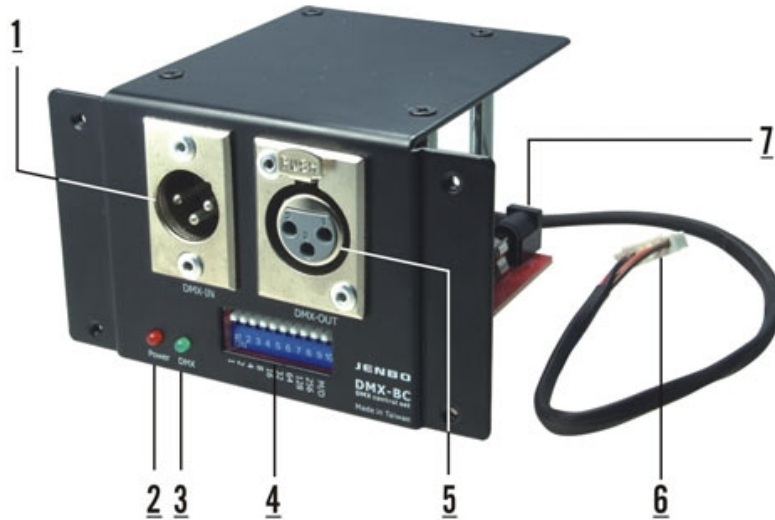
- Fixed Lenses: 5, 10, 14, 19, 26, 36, 50, 70, 90°
- Zoom Lenses: 15-30° and 25-50°

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DMX Module (Optional)

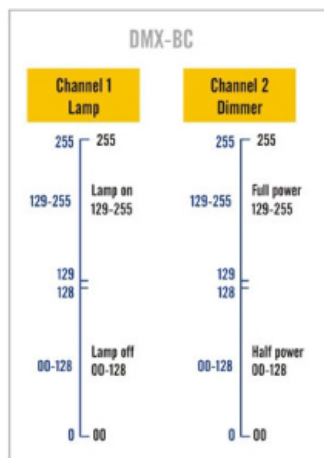
The ES-2500 can be equipped with an optional DMX module for control of:

- Lamp On/Off
- Lamp Brightness (100% or 50%)

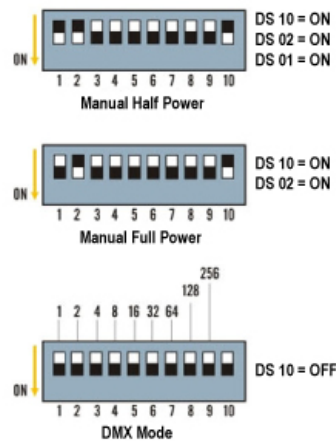


1	Male XLR	DMX data input (1: com 2: d- 3: d+)
2	Red LED	Power indicator
3	Green LED	DMX signal indicator
4	Dip switch	Auto test and DMX address set
5	Female XLR	DMX data output (1: com 2: d- 3: d+)
6	2.5XH Connector	Control signal output
7	Jack D2.1	DC power in 12V~24V 500mA

DMX Channels



DIP Switch Settings



Photometrics

ECO Spot™ 2500		PROJECTION DISTANCE IN FEET (ft)																			
Lens	Value	3	6	9	12	15	18	24	30	36	42	64	88	112	136	200	300	400	500	600	1500
5°	Image Diam. (ft)									4	4	6	9	11	14	20	30	40	50	60	150
	illumination (fc)									5352	3932	1693	896	553	375	173	77	43	28	19	3
10°	Image Diam. (ft)								4	5	6	9	12	16	19	28	42	56	70	84	
	illumination (fc)								3468	2408	1769	762	403	249	169	78	35	20	12	9	
14°	Image Diam. (ft)								6	8	9	13	18	24	29	42	63	84	105	126	
	illumination (fc)								1574	1093	803	346	183	113	77	35	16	9	6	4	
19°	Image Diam. (ft)				4	5	6	8	9	11	17	23	29	35	52	78	104	130			
	illumination (fc)				3556	2469	1389	889	617	454	195	103	64	43	20	9	5	3			
26°	Image Diam. (ft)				4	5	6	8	10	12	13	20	28	36	44	64	96	128			
	illumination (fc)				2843	1820	1264	711	455	316	232	100	53	33	22	10	5	3			
36°	Image Diam. (ft)				4	6	7	8	11	14	17	20	30	41	53	64	94	141			
	illumination (fc)				2750	1547	990	688	387	248	172	126	54	29	18	12	6	2			
50°	Image Diam. (ft)			4	5	7	9	11	14	18	22	25	38	53	67	82	120				
	illumination (fc)			3203	1424	801	513	356	200	128	89	65	28	15	9	6	3				
70°	Image Diam. (ft)			7	10	14	17	21	27	34	41	48	73	100	128	155					
	illumination (fc)			1547	687	387	247	172	97	62	43	32	14	7	4	3					
90°	Image Diam. (ft)			5	10	15	20	24	29	39	49	59	68	104	143						
	illumination (fc)			2770	692	308	173	111	77	43	28	19	14	6	3						
15°-30° Zoom	Image Diam. (ft)								3	5	6	7	8	12	17	21	26	38	57	76	114
	illumination (fc)								3528	1984	1270	882	648	279	148	91	62	29	13	7	3
25°-50° Zoom	Image Diam. (ft)								4	5	7	9	10	12	19	26	32	39	58	87	116
	illumination (fc)								2000	1389	781	500	347	255	110	58	36	24	11	5	3
50°	Image Diam. (ft)								4	6	7	9	11	13	16	24	33	41	50	74	111
	illumination (fc)								2131	1364	947	533	341	237	174	75	40	24	17	8	3
25°	Image Diam. (ft)								5	5	7	9	11	13	19	26	34	41	60	90	120
	illumination (fc)								1864	1294	728	466	324	238	102	54	33	23	10	5	3
36°	Image Diam. (ft)								4	6	7	9	12	14	17	20	31	42	54	65	96
	illumination (fc)								3086	1736	1111	772	434	278	193	142	61	32	20	14	6
50°	Image Diam. (ft)								4	5	7	9	11	14	18	21	25	38	52	66	80
	illumination (fc)								5172	2299	1293	828	575	323	207	144	106	45	24	15	5
Lens	Value	3	6	9	12	15	18	24	30	36	42	64	88	112	136	200	300	400	500	600	1500

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How to Read the Illumination Values	
Foot Candles (ft)	For a quick overview, the illumination values in the tables are color coded. There are many factors that determine the visibility of a projection, such as ambient light, color and reflectiveness of the projection surface, competing light, gobo colors, projector color temperature, and other factors. Therefore our recommendations should only be used as guidelines and we cannot guarantee a successful application. If you are unsure, please call us to discuss your application.
300+	Very high brightness for extremely bright environments, i.e. bright areas, additionally flooded with daylight, such as Lobby-, Retail-, Trade Show-, Environment. Outdoors (shady, no direct sunlight). Color gobos project in vibrant colors.
45-300	Very high brightness for very bright environments, such as Office-, Lobby-, Retail-, Trade Show-, Environment. Color gobos project in vibrant colors. Outdoors well visible at night with vibrant colors.
20-45	Sufficient brightness for regular environments, such as Bars, Clubs, and intimate Restaurants, Theaters, and dimmed Conference rooms. Outdoors well visible at night. Color gobos should preferably be used with lighter colors and the projection surface should be light and somewhat reflective.
20-	Only advisable for very dark environments and subtle projection of light colored artwork, preferably on light, reflective projection surface. Outdoors visible at night.
Metric Conversions: For Meters multiply feet by .3048. For Lux multiply footcandles by 10.76	