ECO Spot™ LED B90/B150 User Manual

Thank you for choosing an ECO Spot™ Gobo projector.

Please read this manual before installing or operating this fixture, follow the safety precautions listed below and observe all warnings.

Package Contents

- ✓ Projector with power cord
- ✓ Test Gobo

Safety Information

- Place your fixture at a suitable place with good air flow.
- Keep flammable materials away from the fixture.
- Minimum distance to flammable material = 1 ft (0.3m).
- Provide a minimum clearance of 4 in (10cm) around air vents.
- Use only genuine spare parts for part replacement.
- Do not look directly into the lamp; it can result in eye damage.
- Always unplug the unit from the power mains before any service is done.
- Light fixtures should be installed and maintained only by qualified personnel with experience in lighting equipment and general electrical experience.

Electrical Safety

- Disconnect the fixture from AC power before handling the fixture.
- Always ground (earth) the fixture electrically.
- 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.

Handling Instructions

- Before the initial start-up, please unpack and carefully check for damage caused during transportation.
- Place your fixture at a suitable place with good air flow.
- Make sure there are no flammable materials close to the lamp.
- 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 an approved means of secondary attachment such as a safety cable.

Warranty

One Year from Date of Purchase. Keep your receipt for reference and contact your dealer in case of warranty issues.

Projection Lenses

The projector accommodates interchangeable projection lenses to allow optimizing the projection size and resulting brightness at varying distances. The more narrow the lens, the smaller and brighter the image will be at a given distance.

Focusing

- Power up the projector by pressing the power switch in the back.
- Focus the projection by twisting the lens in and out until the image is well focused. When used for the first time, the lens will often need to be twisted outwards many rotations to reach the focusing point.
- Turn on the gobo rotator with the push-button in the back and switch it off when the gobo projects in the desired position.
- Re-adjust the focus if necessary.

Gobo Rotator

The gobo rotator can be turned on/off with the switch on the back plate.

There are no controls for rotating speed or direction.

Multi-functional Yoke

- The yoke can slide over the whole length of the fixture body to accommodate a wide range of pointing directions.
- The yoke serves as stand.
- The yoke can be screwed to a wall or ceiling or fastened with a C-clamp

Gobo Placement

The Projector uses M-Size gobos, (see *Specifications* for Gobo Dimensions).

- If the projector is on, turn it off.
- Even though this is a LED projector, the gobo gets hot, please wait a few minutes for the gobo to cool down if the projector was on.
- Turn off Unscrew the thumbscrews to remove the front cover with the projection lens.
- Push the two pins of the gobo retaining ring together and pull out the retaining ring. Carefully remove the old gobo and replace it with the new gobo.
- If you have a glass gobo, place the more reflective side towards the light bulb.
- Replace the retaining ring and make sure it evenly pushes the gobo all the way back.
- Replace the front cover and adjust the focus by twisting the projection lens in or out.

Power Supply B90 (B150 in brackets)

90-265V, 50/60Hz

B90: 110W, **B150:** 180W

Ambient Operating Temperature

-13 to 104°F (-25 to 40°C)

Dimensions / Weight

Fixture Body: 7.5in x 5.5in x 16.5in (190mm x 140mm x 419mm)

Total Length: 20in (500mm) with 25deg. lens, 24in (610mm) with 15 deg. lens

Yoke Base: 6.4in x 7.8in (163 x 198mm)

Yoke Height: 7.5in (190mm) (from base to center)

Total Height: 10in (254mm) (from base to top)

Weight 13lbs (6kg)

Gobo Dimensions

Metal or Glass Gobos and Dichroic filters

Standard Gobo Size: M-Size

Outer Diameter (OD): 66mm

Image Diameter (ID): 48mm

Max Thickness: 4mm

LED Lamp

Rated Bulb life: 40,000h

Color Temperature: 6,000k, +/-500k

Rated luminous flux:

B90: 6,500lm, **B150**: 12,000lm

Effective luminous flux:

B90: 6,200lm, **B150**: 8,900lm

CRI: 75

Lens Options

The projector can be equipped with standard ECO Spot projection lenses.

A larger focal length (f) makes a smaller projection angle and therefore a smaller but brighter image. Currently these lenses are available:

- Medium-Narrow f=115mm 25°
- Medium f=140mm 20°
- Semi-Narrow f=140mm 15°

ECO Spot™ Photometrics — ECO Spot is a Trademark of Globus New Media LLC dba Globosource

Model / Gobo Size	Color Temp.	Lens	Beam Mult.	Effective lm	CD	Value	PROJECTION DISTANCE IN FEET (ft) .3	6	9	12	15	18	24	30	36	42	64	88	112	136	200	250
ES-LED-B90 ES-LED-B90E ES-LED-B90C	6000k +/- 500k	200mm (15°)	0.25	6217	126,720	Image Diam. (ft)			2.3	3.0	3.8	4.5	6.0	7.5	9.0	10.5	16.0	22.0	28.0	34.0	50.0	
						Illumination (fc)			1564	880	563	391	220	141	98	72	31	16	10	7	3	
		140mm (20°)	0.35	6300	65,520	Image Diam. (ft)		2.1	3.2	4.2	5.3	6.3	8.4	11	13	15	22	31	39	48		
						Illumination (fc)		1820	809	455	291	202	114	73	51	37	16	8	5	4		
M-Size		115mm (28°)	0.42	5700	41,760	Image Diam. (ft)		2.5	3.8	5.0	6.3	7.5	10.0	13	15	18	27	37	47			
						Illumination (fc)		1160	516	290	186	129	73	46	32	24	10	5	3			
ES-LED-B150 ES-LED-B150E ES-LED-B180C	6000k +/- 500k	200mm (15°)	0.25	8124	165,600	Image Diam. (ft)			2.3	3.0	3.8	4.5	6.0	7.5	9.0	10.5	16.0	22.0	28.0	34.0	50.0	62.5
						Illumination (fc)			2044	1150	736	511	288	184	128	94	40	21	13	9	4	3
		140mm (20°)	0.35	9693	100,800	Image Diam. (ft)		2.1	3.2	4.2	5.3	6.3	8.4	11	13	15	22	31	39	48	70	
						Illumination (fc)		2800	1244	700	448	311	175	112	78	57	25	13	8	5	3	
M-Size		115mm (28°)	0.42	8845	64,800	Image Diam. (ft)		2.5	3.8	5.0	6.3	7.5	10.0	13	15	18	27	37	47	57		
						Illumination (fc)		1800	800	450	288	200	113	72	50	37	16	8	5	4		

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.
Projection Size Calculation	For the resulting Projection Size at any given Distance, Multiply the number in the "Beam Mult." column with your Projection Distance. **Projection Size = Distance x Beam Mult.** For the Distance needed to achieve a desired Projection Size, Divide the Projection size by the Beam Multiplier. **Distance = Projection Size / Beam Mult.**
300+	Extreme 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.
15-45	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.
15-3	Only advisable for dark environments and subtle projection of light colored artwork, preferably on light, reflective projection surface. If all conditions are met, the max. listed image distance/size can be doubled in most cases.

Metric Conversions: For Meters multiply feet by .3048. For Lux multiply footcandles by 10.76