ECO Spot™ LED B90E/B150E/B300E Exterior 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.

WARNING! - To prevent damage to the LED, always connect the driver to the projector FIRST before powering up the driver.

Package Contents

- ✓ Projector with Projection Lens
- ✓ External LED Driver
- ✓ Test Gobo mounted
- ✓ Thread ring with silicone seal for the projection lens

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.
- 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 it.
- Follow all local building and electrical codes and apply 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.
- The fixtures have power plugs for testing and for indoor use but exterior installations usually require hard-wired connections. Follow all related codes.

Outdoor Use

The projector and external driver are designed for outdoor use. The rear, perforated cooling part of the projector including the fan is rated for water exposure. To extend the projector life, an external hood can be placed above the projector but this measure is not mandatory.

Handling Instructions

- Before the initial start-up, please unpack and carefully check for damage caused during transportation.
- 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.
- If the fixture is equipped with a gobo rotator, turn it on and then off again once the gobo projects in the desired position.
- Loosen the outer ring around the lens that acts as a water seal.
- 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. When in doubt, keep going.
- Re-tighten the outer ring with the seal to ensure the lens won't leak water.

Gobo Rotator

If the fixture is equipped with a gobo rotator, it can be turned on/off with the silver push-button on the front plate underneath the lens. There are no controls for rotating speed or direction. Even when not used, the gobo rotator comes handy for straightening the gobo image after a gobo was installed.

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Multi-functional Yoke

The yoke can slide over the fixture body to accommodate a wide range of pointing directions. It can serve as stand or can be mounted to a wall, ceiling or truss.

- Pointing position UP: With the long-hole pointing towards the back of the projector, the main pointing position is UP.
- Pointing position DOWN: Remove the yoke screws and flip the projector so the long-hole points to the front plate.

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.
- Unscrew the thumbscrews to remove the front cover with the projection lens. Keep the rubber seals and re-use them with the thumb screws to prevent leakage.
- 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 rubber seals and tighten the thumb screws well.
- Adjust the focus by twisting the projection lens in or out.
- Re-tighten the lens retaining ring towards the front plate so the silicone ring makes a water tight seal.

Power Supply

90-265V, 50/60Hz

B90E: 110W, **B150E:** 180W, **B300E**: 360W

Ambient Operating Temperature

-13 to 104°F (-25 to 40°C)

Dimensions / Weight

Fixture Body: 7.5in x 5.5in x 14.5in (190mm x 140mm x 370mm)

Total Length: 18in (460mm) with 25deg. lens, 20in (510mm) 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: B90E: 12lbs (5.4kg), **150E:** 13lbs (6kg), **B300E**: 17lbs (7.7kg)

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:

B90E: 7,500lm, **B150E**: 12,000lm, **B300E**: 20.000

Effective luminous flux:

B90E: 6,200lm, **B150E**: 8,900lm, **B300E**: 11,500lm

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°

IP-Ratings

LED Driver: IP65, **Fixture:** IP55

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 M-Size	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		
		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-B150C M-Size	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)			3044	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	
		115mm (28°)	0.42	8845	84,800	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

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