

Rainbow[®]

**LIR SERIES
INFRARED ILLUMINATOR
INSTALLATION INSTRUCTIONS**

Rainbow[®]

International Space Optics

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NOTES:

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7. TROUBLE SHOOTING

- **Check power supply.** Check that the unit is connected to a voltage between 12 – 40 VDC or 24VAC (+/- 30%).
- **Check photocell functions** by covering with black tape and having the telemetry link closed. The photocell operation has an in-built delay of up to 5 seconds.

8. CERTIFICATION



This product complies with 89/336/EEC, 73/23/EEC
Low Voltage Directive meeting the following:

CE Standards

EN 60742/1/1990, EN 60598/2/5

Electromagnetic Compatibility Directive meeting the
following standards

EN 61000, EN 50130-4



This symbol on the product or in the instructions means that the electrical and/or electronic equipment to which it relates should be disposed of at the end of life separately from domestic household waste.

There are separate collection systems for recycling in the E.U.
For more information, please contact the Local Authority
or supplier of the product

LIR SERIES INFRA-RED ILLUMINATOR

1. DESCRIPTION
2. SPECIFICATION
3. INSTALLATION
4. SAFETY
5. DIMENSIONS
6. MAINTENANCE
7. TROUBLE SHOOTING
8. CERTIFICATION

CONTENTS OF BOX

1 x LIR INFRARED LAMP INCLUDING BRACKET



Whilst every effort has been made to ensure that all information contained in this document is correct at the time of publication, due to a continued policy of continuous product development Rainbow reserve the right to change information herein without prior notice

LIR Series IR ILLUMINATOR INSTALLATION INSTRUCTIONS

1. DESCRIPTION

A compact Infra-Red illuminator comprised of high efficiency LEDs, The LIR series of infrared illuminators are the ideal choice for short to mid-range applications, effectively illuminating distances up to 250m / 820ft.

The inherent low power consumption of the solid state LED array results in low running costs over the life of the lamp. With an average LED life well in excess of 5 years the LIR series can provide real savings for the user in terms of maintenance and servicing costs.

Tough, rugged and waterproof with an attractive design, LIR units can be used internally and externally to dramatically improve the performance of IR sensitive CCTV cameras under night-time conditions.

- **POWER in the HEAD**

The LIR range now also has Power in the Head technology where the unit is fitted with a Low Voltage Regulation Board (LRB) and can be directly powered from the industry standard 12 Vdc / 24Vac supply, eliminating the need for a separate PSU.

- **Patented Even Illumination**

The patented Even Illumination technology ensures that the infrared illumination is constant, both across a scene and depth-wise, eliminating all hotspots.

- **IR Power Adjust**

The LIR range of illuminators incorporate an IR power adjust potentiometer at the back of the unit to allow adjustments to be made in order to achieve the optimum operation of the lamp in both internal and external applications and when working at different ambient temperatures.

- **Photocell Adjust**

LIR illuminators provide a photocell mounted at the back of each unit as standard.

The photocell is designed to automatically switch the lamps ON at dusk and turn OFF at dawn.

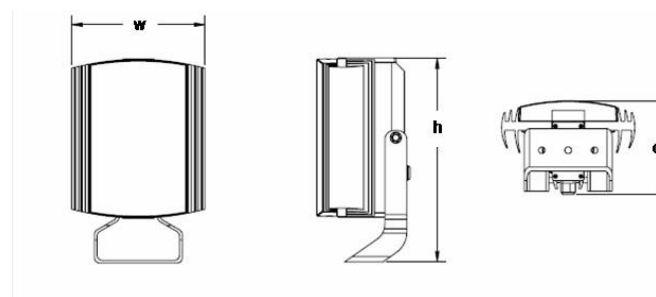
4. SAFETY

WARNING: When the lamp is running it is hot to touch. Before touching switch off the illuminator and allow to cool for a minimum period of 10 minutes.

Do not stare directly into the lamp at a distance of less than 1.7 m.

5. DIMENSIONS

Dimensions.



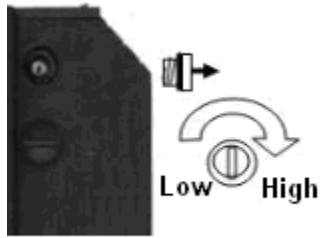
Model	w		h		d	
	mm	inch	mm	inch	mm	inch
LIR1 Series	98	3.9	138	5.4	85	3.4
LIR2 Series	152	6.0	231	9.1	106	4.2
LIR3 Series	226	8.9	309	12.2	139	5.5

6. MAINTENANCE

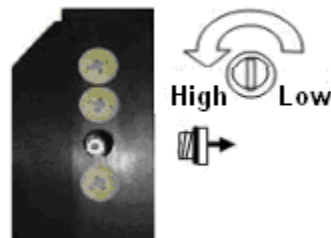
LIR illuminators are optically precise units. There are no user repairable components within the unit and it is therefore sealed for life.
Do not attempt to dismantle or gain access to the unit.

IR Power Adjustment

LIR1 Series

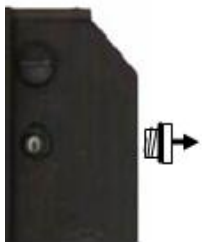


LIR2 and LIR3 Series



Photocell Sensitivity Adjustment

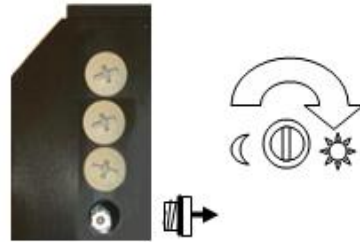
LIR1 Series



LIR2 Series



LIR3 Series



Photocell

The photocell is designed to automatically switch the lamps ON at dusk and turn OFF at dawn. A high degree of hysteresis is incorporated to avoid on/off switching in marginal light conditions.

The unit is factory set at approximately 20 lux ON and 70 lux OFF, but can be adjusted using the photocell sensitivity adjustment, see below. The photocell is built into the back of the lamp.

2. SPECIFICATION

Illuminator Specification.

LED Array	High Efficiency InfraRed LEDs
No. of LEDs	35 (LIR185-EI, LIR285-EI, LIR385-EI, LIR685-EI, LIR985-EI, LIR1285-EI) 140 (LIR2185-EI, LIR2285-EI, LIR2385-EI, LIR2685-EI, LIR2985-EI, LIR21285-EI) 350 (LIR3185-EI, LIR3285-EI, LIR3385-EI, LIR3685-EI, LIR3985-EI, LIR31285-EI)
Power Consumption	15W (LIR185-EI, LIR285-EI, LIR385-EI, LIR685-EI, LIR985-EI, LIR1285-EI) 50W (LIR2185-EI, LIR2285-EI, LIR2385-EI, LIR2685-EI, LIR2985-EI, LIR21285-EI) 90W (LIR3185-EI, LIR3285-EI, LIR3385-EI, LIR3685-EI, LIR3985-EI, LIR31285-EI).
Average Life	>5 year
Temp. Range	-58°F to +122°F (-50°C to +50°C)
Construction	Robust aluminium extrusion with acrylic front window. IP67 with pressure equalisation.
Colour	Black anodized heat sink with black front fascia
Cable Length	Supplied with 13FT(4m) connecting cable.
Bracket	Wall mount U-bracket included

Lens/Beam Pattern.

The lamp must be matched to the scene and to the camera lens focal length. Before installation ensure that the illuminator has been correctly specified to support the CCTV system. The system planning must take into account the product achievable distances, lens/beam pattern and filter.

Achievable Distances

Illumination distance achievable will depend on the Infra-Red characteristics of the CCD camera and lens used.

850 NM Version

Product Code	Beam Angle	Wavelength	Illumination	Achievable Distance	HOV
LIR185-EI	10°	850nm	Semi- Covert	60m / 195ft	10m / 33ft
LIR285-EI	20°	850nm	Semi- Covert	50m / 165ft	17m / 55ft
LIR385-EI	30°	850nm	Semi-Covert	40m / 130ft	21m / 70ft
LIR685-EI	60°	850nm	Semi-Covert	30m / 100ft	35m / 115ft
LIR985-EI	95°	850nm	Semi-Covert	25m / 80ft	55m / 180ft
LIR1285-EI	120°	850nm	Semi-Covert	20m / 65ft	70m / 225ft
LIR2185-EI	10°	850nm	Semi- Covert	125m / 410ft	21m / 70ft
LIR2285-EI	20°	850nm	Semi- Covert	95m / 310ft	30m / 105ft
LIR2385-EI	30°	850nm	Semi-Covert	85m / 280ft	45m / 150ft
LIR2685-EI	60°	850nm	Semi-Covert	65m / 215ft	75m / 245ft
LIR2985-EI	95°	850nm	Semi-Covert	50m / 165ft	110m / 355ft
LIR21285-EI	120°	850nm	Semi-Covert	35m / 115ft	120m / 400ft
LIR3185-EI	10°	850nm	Semi- Covert	250m / 820ft	45m / 150ft
LIR3285-EI	20°	850nm	Semi- Covert	170m / 555ft	60m / 195ft
LIR3385-EI	30°	850nm	Semi-Covert	160m / 525ft	85m / 280ft
LIR3685-EI	60°	850nm	Semi-Covert	110m / 360ft	130m / 420ft
LIR3985-EI	95°	850nm	Semi-Covert	75m / 245ft	160m / 535ft
LIR31285-EI	120°	850nm	Semi-Covert	55m / 180ft	190m / 625ft

940 NM Version

Product Code	Beam Angle	Wavelength	Illumination	Achievable Distance	HOV
LIR194-EI	10°	940nm	Semi- Covert	33m / 105ft	6m / 19ft
LIR294-EI	20°	940nm	Semi- Covert	28m / 90ft	10m / 33ft
LIR394-EI	30°	940nm	Semi-Covert	22m / 70ft	12m / 40ft
LIR694-EI	60°	940nm	Semi-Covert	17m / 55ft	20m / 65ft
LIR994-EI	95°	940nm	Semi-Covert	15m / 45ft	30m / 100ft
LIR1294-EI	120°	940nm	Semi-Covert	10m / 35ft	40m / 125ft
LIR2194-EI	10°	940nm	Semi- Covert	70m / 225ft	12m / 40ft
LIR2294-EI	20°	940nm	Semi- Covert	50m / 170ft	17m / 55ft
LIR2394-EI	30°	940nm	Semi-Covert	45m / 150ft	25m / 80ft
LIR2694-EI	60°	940nm	Semi-Covert	35m / 120ft	40m / 125ft
LIR2994-EI	95°	940nm	Semi-Covert	30m / 90ft	65m / 215ft

LIR21294-EI	120°	940nm	Semi-Covert	20m / 60ft	70m / 225ft
LIR3194-EI	10°	940nm	Semi- Covert	135m / 450ft	21m / 70ft
LIR3294-EI	20°	940nm	Semi- Covert	95m / 305ft	30m / 100ft
LIR3394-EI	30°	940nm	Semi-Covert	85m / 290ft	45m / 150ft
LIR3694-EI	60°	940nm	Semi-Covert	60m / 200ft	70m / 225ft
LIR3994-EI	95°	940nm	Semi-Covert	40m / 135ft	85m / 280ft
LIR31294-EI	120°	940nm	Semi-Covert	30m / 100ft	100m / 340ft

Note: Achievable distance based on a 20dB s/n ratio using a 1/2" Ex-View CCD and F1.4 lens aperture

3. INSTALLATION

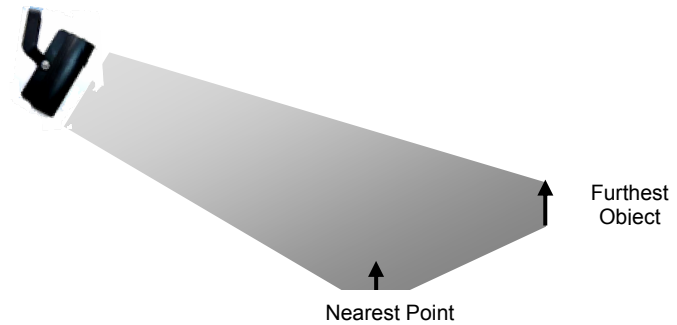


Diagram 1. Installing your LIR InfraRed lamp

Tilt slowly until top of lamp is directed at the top of the furthest object

NOTE: The LIR illuminator is low voltage 12VDC / 24VAC.

Setting up is critical to obtaining the best performance from your Infra-Red lamp. Optimum results are achieved by setting up at night and viewing the results on a monitor.

- Attach the LIR illuminator bracket to the pan and tilt unit, wall bracket or camera housing as required.
- Connect the lamp to 12VDC / 24VAC.
- Commission the mains supply, camera and monitoring control equipment.
- Adjust the pan of the illuminator to match the camera field of view.
- Adjust the vertical alignment by loosening the side bolts (one on each side of the main body) to maximise the results.

Tilt the lamp downwards until the near part of required field of view is saturated with Infra-Red light, as viewed on the monitor. SLOWLY and GRADUALLY tilt the lamp upwards until the far part of the required field of view is illuminated correctly on the monitor screen.