

# THE COMPLETE GUIDE TO RAYTEC PRODUCTS 2007

**ray**TEC<sup>®</sup>

PRODUCT GUIDE 2007

[www.rayteccctv.com](http://www.rayteccctv.com)



## WHO ARE RAYTEC?

With offices in North-East England and Texas, USA, Raytec are a specialist manufacturer in the CCTV and the ITS markets. Raytec provide a complete range of Infra-Red, White-Light and Hybrid illuminators for CCTV professionals. Raytec also manufacture a range of advanced number plate capture (ANPR / LPR) cameras and stand alone LED illuminators purpose designed for use in ANPR / LPR applications.

Raytec are passionate about lighting and believe that lighting can improve the performance of any CCTV system. Raytec's Infra-Red lighting products provide covert surveillance, our white-light products provide visible surveillance and Hybrid (IR & White-Light) products utilise covert surveillance with a visible white light or flash that can be triggered on alarm to deter intruders and prevent crime.

Raytec's management team of Shaun Cutler, David Lambert, Tony Whiting and Eddie Reynolds have over 30 years combined experience in designing and selling innovative illumination solutions to the global CCTV industry.

***Raytec's goal is to be No.1 in CCTV lighting and to provide world class lighting solutions for any CCTV application, long range, short range, internal and external including specialist applications.***

### RAYTEC: THE STORY BEHIND THE NAME

Raytec was chosen for its combination of 'Ray' and 'Technology'. Ray symbolises the heart of the company - light. 'Tec' reflects our focus on the technology inherent in our lighting products.

# ILLUMINATION FOR ANY CCTV APPLICATION

## CCTV LIGHTING



### **RAYMAX INFRA-RED**

A full range of Infra-Red lighting to cover any professional CCTV installation.

- Datasheets p20-29
- Distance Calculator p8
- Specification Guide p10-11



### **RAYLUX WHITE-LIGHT**

A full range of White-Light lighting to cover any professional CCTV installation.

- Datasheets p30-39
- Distance Calculator p9
- Specification Guide p10-11



### **NEW - HYBRID IR & WHITE-LIGHT**

Combined Infra-Red and white-light illuminators for multi-purpose lighting applications.

- Datasheets p40-41
- Distance Calculator p8-9
- Specification Guide p10-11



### **NEW - RAYMAX 300 AND RAYLUX 300**

Ultimate adaptive illumination to cover long range narrow angles or wide angle scenes (180°+). Perfect for Dome applications.

- Datasheets p20-21 and p30-31
- Distance Calculator p8-9
- Specification Guide p10-11

## ANPR/LPR



### **VOYAGER NUMBER PLATE CAMERA**

A complete pre-calibrated number plate capture camera integrating camera, lens, filter, housing, PSU and lighting technology.

- Datasheets p42-43



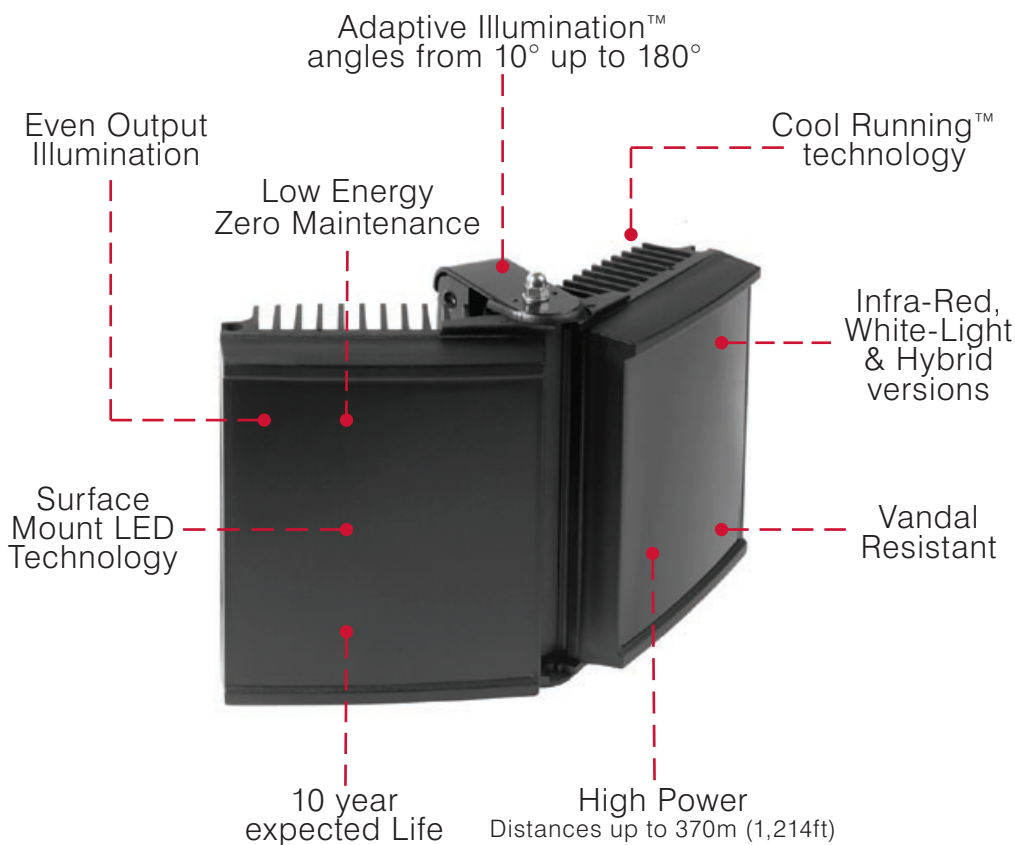
### **STAND ALONE PULSED LED'S**

Pulsed PSU LED lighting systems for use in ANPR/LPR applications.

- Specifications p15

## WORLD LEADING PERFORMANCE

Raytec provide a full range of Infra-Red and White-Light illuminators for the CCTV Professional. All our illuminators offer industry leading performance with low running costs and low maintenance. Raytec illuminators offer a number of unique performance enhancing features:



All Raytec LED illuminators are provided with a 5 year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!





### **ADAPTIVE ILLUMINATION™**

Designed for RAYMAX Infra-Red and RAYLUX White-Light illuminators, Adaptive Illumination™ allows the installer to adjust the angle of the light projection from a single unit to fit the specific demands of any installation. Adjustment is quick and convenient and any angle upto 180 degrees (depending on model) is easily selectable. Adaptive Illumination is patent pending technology available exclusively from Raytec.



### **COOL RUNNING™ Thermal Management System**

Cutting edge materials science techniques have been employed to maximise thermal efficiency throughout the unit. Cool Running™ is specifically designed to allow all Raytec LED products to provide exceptionally long life - up to 10 years.



### **SMT (Surface Mount Technology)**

The future of lighting is surface mount LED technology. Compared to standard through hole LED's, surface mount LED's are a more robust solution increasing reliability and improving product life. They are also far more efficient at the dissipation of heat allowing the LED's to run at higher power and achieve significantly improved performance.



### **VANDAL RESISTANT**

The polycarbonate lens design protects against severe blows from crowbars, baseball bats and can even withstand shots from air pistols and rifles (range dependant).



### **ENERGY SAVING**

All Raytec illuminators use high efficiency LED's and advanced control methods to deliver extremely low electrical consumption. Raytec illuminators are energy saving and deliver huge savings in running costs compared to traditional bulb illuminators together with zero maintenance.



### **HIGH DEFINITION LIGHTING**

High Definition Lighting allows cameras to provide crystal clear, high signal images during the hours of darkness. The breakthrough in HD lighting is made possible with Raytec's high power LED technology delivering increased power on scene. High definition cameras require high definition lighting.

## RAYMAX INFRA-RED



### POWERFUL

- Distances up to 370m (1,214ft)
- Latest LED technology
- High Power - low running costs

### FLEXIBLE

- Adaptive Illumination™
- Various Angles (10° to 180°+)
- Fully Controllable Power Supply

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal Resistant

### CONTROLLED

- Zero Light Pollution
- Even Output Illumination
- Semi-Covert (850nm) or Covert (950nm) Options



RAYMAX 300  
Distance>370m (1,214ft)



RAYMAX 200  
Distance>300m (985ft)



RAYMAX 100  
Distance>150m (492ft)



RAYMAX 50  
Distance>75m (246ft)



RAYMAX 25  
Distance>35m (115ft)

## HYBRID IR & WHITE-LIGHT



The HYBRID product range integrates RAYMAX IR and RAYLUX White-Light into a single, flexible lighting unit. HYBRID illuminators allow the IR to provide covert surveillance with the option of using the white-light as a visible deterrent when an intruder enters the secure zone.

HYBRID units offer all the advantages of Raytec's RAYMAX and RAYLUX product lines, including Adaptive Illumination™ and Raytec's industry leading 5 year warranty.

HYBRID is available as the following products:

HYBRID 300, HYBRID 200 & HYBRID 100

## RAYLUX WHITE-LIGHT



### POWERFUL

- Distances up to 150m (492ft)
- Latest LED technology
- High Power - low running costs

### FLEXIBLE

- Adaptive Illumination™
- Various Angles (10° to 180°+)
- Fully Controllable Power Supply

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal Resistant

### CONTROLLED

- Excellent colour rendition
- Even Output Illumination



**RAYLUX 300**  
Distance>150m (492ft)



**RAYLUX 200**  
Distance>120m (394ft)



**RAYLUX 100**  
Distance>80m (262ft)



**RAYLUX 50**  
Distance>50m (165ft)



**RAYLUX 25**  
Distance>30m (98ft)

## VOYAGER ANPR/LPR



The Voyager series is a compact, integrated licence plate capture camera designed for high performance, long life and low maintenance. All Voyager products capture images of the licence plate on a 24 hour basis – day and night.

Voyager overcomes all problems associated with licence plate capture – speed, reflectivity of licence plate, car headlights, sunlight and focusing (depth of field) – regardless of ambient lighting conditions.

Voyager delivers out of the box performance to ensure easy installation. Voyager is delivered complete with bracketry and power supply and is designed to provide plug and play capability.

Voyager is available in 10, 20, 30 and 40m versions.

## RAYMAX - MAXIMUM ACHIEVEABLE DISTANCES

RAYMAX 300		Metres		Feet	
		Narrow	Wide	Narrow	Wide
RM300-AI-10	10-30°, 850nm + PSU	370	220	1214	722
RM300-AI-30	30-90°, 850nm + PSU	200	120	656	394
RM300-AI-50	50-180°, 850nm + PSU	140	100	460	328
RM300-AI-120	120-180°, 850nm + PSU	80	50	262	164

RAYMAX 200		Metres		Feet	
		Narrow	Wide	Narrow	Wide
RM200-AI-10	10-20°, 850nm + PSU	300	200	985	656
RM200-AI-30	30-60°, 850nm + PSU	160	106	525	346
RM200-AI-50	50-100°, 850nm + PSU	112	74	367	243
RM200-AI-120	120-180°, 850nm + PSU	64	42	210	139

RAYMAX 100		Metres		Feet	
		Narrow	Wide	Narrow	Wide
RM100-AI-10	10-20°, 850nm + PSU	150	100	492	328
RM100-AI-30	30-60°, 850nm + PSU	80	53	262	173
RM100-AI-50	50-100°, 850nm + PSU	56	37	184	121
RM100-AI-120	120-180°, 850nm + PSU	32	21	105	69

RAYMAX 50		Metres		Feet	
		Narrow	Wide	Narrow	Wide
RM50-AI-10	10-20°, 850nm + PSU	75	50	246	164
RM50-AI-30	30-60°, 850nm + PSU	40	26	131	87
RM50-AI-50	50-100°, 850nm + PSU	28	18	92	61
RM50-AI-120	120-180°, 850nm + PSU	16	11	52	35

Low voltage options of RM50 also available.

RAYMAX 25		Metres	Feet	
RM25-10	10°, 850nm + PSU	35	115	non AI
RM25-30	30°, 850nm + PSU	20	66	non AI
RM25-50	50°, 850nm + PSU	14	46	non AI
RM25-120	120°, 850nm + PSU	8	26	non AI

Low voltage options of RM25 also available.

### COVERT INFRA-RED

950nm, covert illumination versions of all RAYMAX products are available.

Add the suffix '-C' to the above product codes to order the covert model.

Covert options could result in a 40% decrease in distance compared to 850nm IR.

All distances are subject to camera and lens performance - call Raytec for **FREE** lighting design assistance for your specific project.



## RAYLUX - MAXIMUM ACHIEVEABLE DISTANCES

### RAYLUX 300

		Metres		Feet	
		Narrow	Wide	Narrow	Wide
RL300-AI-10	10-30°, White-Light + PSU	150	100	492	328
RL300-AI-30	30-90°, White-Light + PSU	75	50	246	164
RL300-AI-50	50-180°, White-Light + PSU	50	34	165	112
RL300-AI-120	120-180°, White-Light + PSU	30	20	98	66

### RAYLUX 200

		Metres		Feet	
		Narrow	Wide	Narrow	Wide
RL200-AI-10	10-20°, White-Light + PSU	120	80	394	262
RL200-AI-30	30-60°, White-Light + PSU	60	40	197	130
RL200-AI-50	50-100°, White-Light + PSU	42	28	138	91
RL200-AI-120	120-180°, White-Light + PSU	24	16	79	52

### RAYLUX 100

		Metres		Feet	
		Narrow	Wide	Narrow	Wide
RL100-AI-10	10-20°, White-Light + PSU	80	53	262	173
RL100-AI-30	30-60°, White-Light + PSU	42	28	138	91
RL100-AI-50	50-100°, White-Light + PSU	30	20	98	65
RL100-AI-120	120-180°, White-Light + PSU	18	12	59	39

### RAYLUX 50

		Metres		Feet	
		Narrow	Wide	Narrow	Wide
RL50-AI-10	10-20°, White-Light + PSU	50	33	165	108
RL50-AI-30	30-60°, White-Light + PSU	28	18	138	60
RL50-AI-50	50-100°, White-Light + PSU	20	13	65	42
RL50-AI-120	120-180°, White-Light + PSU	12	8	39	26

Low voltage options of RL50 also available.

### RAYLUX 25

		Metres	Feet	
RL25-10	10°, White-Light + PSU	30	98	non AI
RL25-30	30°, White-Light + PSU	18	60	non AI
RL25-50	50°, White-Light + PSU	13	42	non AI
RL25-120	120°, White-Light + PSU	8	26	non AI

Low voltage options of RL25 also available.

### HYBRID ILLUMINATORS

Raytec also provide Hybrid illuminators, a mixture of IR and White-Light, for specialist applications. For illumination distances of the Hybrid products please contact Raytec for details.

All distances are subject to camera and lens performance - call Raytec for **FREE** lighting design assistance for your specific project.

# HOW TO SPECIFY LIGHTING

## 1) INFRA-RED OR WHITE-LIGHT?

Identifying the purpose of the system identifies the type of light to use.

Infra-Red light provides greater distance, a varying degree of invisibility (depending on the exact wavelength) and no light pollution. Infra-Red is light designed only to be used by CCTV cameras.

White-Light provides the opportunity to illuminate an area for pedestrians, staff or vehicles in addition to the CCTV system. It can also be used as a visual deterrent when turned on if an intruder is detected.

	Advantages	Disadvantages	Camera Type Suitable
White-Light	Visible deterrent	Light pollution	Colour
	Quick Start (LED only)	Reduced distances	
	Full colour rendition		
Infra-Red	Easy set up	Limited deterrent	Day/Night
	Covert	More difficult to set up	Monochrome
	Longer distances		
	No light pollution		

## 2) ANGLE?

The illumination should ideally match the angle the camera / lens is set-to in order to provide best performance. If not, and too narrow an illumination angle is chosen, the camera will simply see a bright spot in the middle of the scene and the contrast between light and dark areas on scene will be too great to provide high quality images. Illumination which is too wide wastes energy and reduces achievable distance.

The table below shows the FOV angle for different fixed lenses as a reference.

### FIXED LENSES

Lens (mm)	Horizontal FOV - 1/3" CCD	Horizontal FOV - 1/2" CCD
Dome Lens	-	-
2.8	92°	97°
4	64°	78°
6	44°	56°
8	38°	44°
12.5	22°	29°
16	17°	23°
25	11°	15°
50	6°	7°
50+	-	-

RAYMAX Infra-Red	RAYLUX White-Light
RMxxx-AI-120	RLxxx-AI-120
RMxxx-AI-50	RLxxx-AI-50
RMxxx-AI-50	RLxxx-AI-50
RMxxx-AI-30	RLxxx-AI-30
RMxxx-AI-30	RLxxx-AI-30
RMxxx-AI-30	RLxxx-AI-30
RMxxx-AI-30	RLxxx-AI-30
RMxxx-AI-30	RLxxx-AI-30
RMxxx-AI-10	RLxxx-AI-10
RMxxx-AI-10	RLxxx-AI-10

NB: AI-10=10-20°, AI-30=30-60°,  
AI-50=50-100°, AI-120=120-180°

### TECHNICAL ISSUE

With vari-focal lenses the exact FOV is often only established on site through trial and error making exact matching to fixed angle lighting impossible in advance. Raytec provide a range of Adaptive Illumination™ vari-focal lighting specifically for vari-focal lenses.

## VARI-FOCAL LENSES

Lens (mm)	Horizontal FOV - 1/3" CCD	Horizontal FOV - 1/2" CCD
Dome Lens	-	-
2.8 - 6	92° - 44°	-
3.5 - 8	78° - 38°	-
3.5 - 10.5	78° - 27°	-
4.5 - 12.5	60° - 23°	82° - 30°
7.5 - 120	-	35° - 2°
8.5 - 40	34° - 6°	-
10 - 30	20° - 7°	27° - 9°
Long Range Zoom	-	-

RAYMAX Infra-Red	RAYLUX White-Light
RMxxx-AI-120	RLxxx-AI-120
RMxxx-AI-50	RLxxx-AI-50
RMxxx-AI-50	RLxxx-AI-50
RMxxx-AI-50	RLxxx-AI-50
RMxxx-AI-50	RLxxx-AI-50
RMxxx-AI-30	RLxxx-AI-30
RMxxx-AI-30	RLxxx-AI-30
RMxxx-AI-30	RLxxx-AI-30
RMxxx-AI-10	RLxxx-AI-10

NB: AI-10=10-20°, AI-30=30-60°, AI-50=50-100°, AI-120=120-180°

## 3) DISTANCE?

After selecting the angle, the next consideration is distance. How far should the lighting illuminate? Installers and specifiers should be aware that as angle increases, distance decreases.

As a guide, Raytec products can achieve the following distances:

Product	Wavelength	Illumination Angle			
		10-20°	30-60°	50-100°	120-180°
RM300	IR	370m (1,214ft)	200m (656ft)	140m (460ft)	80m (262ft)
RM200	IR	300m (985ft)	160m (525ft)	112m (367ft)	64m (210ft)
RM100	IR	150m (492ft)	80m (262ft)	56m (184ft)	32m (105ft)
RM50	IR	75m (246ft)	40m (131ft)	28m (92ft)	16m (52ft)
RM25*	IR	35m (115ft)	20m (66ft)	14m (46ft)	8m (26ft)
RL300	WHITE-LIGHT	150m (492ft)	75m (246ft)	50m (165ft)	30m (98ft)
RL200	WHITE-LIGHT	120m (394ft)	60m (197ft)	42m (138ft)	24m (79ft)
RL100	WHITE-LIGHT	80m (262ft)	42m (138ft)	30m (98ft)	18m (59ft)
RL50	WHITE-LIGHT	50m (165ft)	28m (138ft)	20m (65ft)	12m (39ft)
RL25*	WHITE-LIGHT	30m (98ft)	18m (60ft)	13m (42ft)	8m (26ft)

\* Fixed angles of 10°, 30°, 50° and 120° only.

## 4) CAMERA AND LENS CONSIDERATIONS

Exact performance of any illuminator in a CCTV system is dependant upon the camera and lens combination used. For best results a high sensitivity camera (for IR projects an IR sensitive camera) should be used with a high transmission lens. Generally a CCTV imaging system (camera, lens, illumination) is only as good as its weakest link.

## CONSULTANT SPECIFICATION NOTES

### RAYMAX IR PRODUCTS

- The illumination shall provide an adaptive beam angle allowing the light to be adjusted to the appropriate scene; providing a vari-focal beam pattern.
  - The Infra-Red unit must be a solid state LED device utilising SMT (Surface Mount Technology) providing at least 10 years illumination life.
  - The IR LED illuminator must be available in several adaptive illumination angles including 10-20 Degrees, 30-60 Degrees, 50-100 Degrees and 120-180 Degrees.
  - The LED illuminator shall be low voltage and low power consumption providing energy efficient Infra-Red lighting.
  - The LED unit must carry a 5 year warranty
  - The LED illuminator should be available in different wavelengths including 850nm and 950nm.
  - The illuminator must include a dedicated PSU with a power adjust facility, an integrated photocell for automatic day/night switching and a volt free telemetry input.
  - The PSU should have additional options of photocell following contact and auxiliary 12Vdc power for the camera
  - Both the illuminator and PSU should be IP66 as a minimum.
  - The Illuminator must be RoHS compliant.
  - The illuminator shall be capable of switching via a PIR detector.
  - The LED Illuminator must be vandal resistant and manufactured with high impact polycarbonate lensing.
- Additional Specifications for Dome Lighting:
- The illuminator must provide a variable angle of between 50-100° or 120-180°.

### RAYLUX WHITE LIGHT

- The illumination shall provide an adaptive beam angle allowing the light to be adjusted to the appropriate scene; providing a vari-focal beam pattern.
  - The White-Light unit must be a solid state LED device utilising SMT (Surface Mount Technology) providing at least 10 years illumination life.
  - The illuminator must be available in several adaptive illumination angles including 10-20 Degrees, 30-60 Degrees, 50-100 Degrees and 120-180 Degrees.
  - The LED illuminator shall be low voltage and low power consumption providing energy efficient Infra-Red lighting.
  - The LED unit must carry a 5 year warranty
  - The illuminator must provide colour corrected and calibrated White-Light
  - The illuminator must include a dedicated PSU with a power adjust facility, an integrated photocell for automatic day/night switching and a volt free telemetry input.
  - The PSU should have additional options of photocell following contact and auxiliary 12Vdc power for the camera
  - Both the illuminator and PSU should be IP66 as a minimum.
  - The Illuminator must be RoHS compliant.
  - The illuminator shall be capable of switching via a PIR detector.
  - The LED Illuminator must be vandal resistant and manufactured with high impact polycarbonate lensing.
- Additional Specifications for Dome Lighting:
- The illuminator must provide a variable angle of between 50-100° or 120-180°.



**ENERGY  
SAVING**

**FREE** energy and carbon footprint calculator. Call Raytec, use the back page faxback or visit [www.rayteccctv.co.uk](http://www.rayteccctv.co.uk).

# COMPARING THE OPERATIONAL COSTS OF CCTV LIGHTING

Raytec LED illuminators deliver exceptional savings compared to traditional CCTV lighting.

	Mains Driven Bulb	Low Voltage Halogen Bulb	LED RAYMAX and RAYLUX
Electrical Consumption	500W	200W	80W
Cost of Consumption*	£110 (\$200)	£44 (\$80)	£18 (\$33)
Average Bulb Life	5 months	8 months	10 years expected life
Bulb Changes per year	2.4	1.5	N/A
Approx Bulb List Price	£75 (\$135)	£60 (\$120)	N/A
Cost of Bulbs per Year	£180 (\$324)	£90 (\$180)	N/A
Yearly Labour Cost**	£96 (\$168)	£60 (\$105)	N/A
Total Yearly Operational Cost	£386 (\$692)	£194 (\$365)	£18 (\$33)

\* Based upon 4,400 hours use per year at 5p kw/hr

\*\* Labour costs calculated at £40 per bulb

## OPERATIONAL COST PER YEAR

	Mains Driven Bulb	Low Voltage Halogen Bulb	LED RAYMAX & RAYLUX	RAYTEC Saving
10 unit GBP	£3,860	£1,940	£180	£3,680
USD	(\$6,920)	(\$3,650)	(\$330)	(\$6,590)
50 unit GBP	£19,300	£9,700	£900	£18,400
USD	(\$34,600)	(\$18,250)	(\$1,650)	(\$32,950)
100 unit GBP	£38,600	£19,400	£1,800	£36,800
USD	(\$69,200)	(\$36,500)	(\$3,300)	(\$65,900)

## COST SAVINGS POSSIBLE BY SWITCHING TO RAYTEC ILLUMINATORS

- Potential saving on 1 illuminator of £368 (\$659) per year
- Over ten years this is a potential saving of £3,680 (\$6,590) for 1 illuminator
- Potential saving on 100 illuminators of £36,800 (\$65,900) per year
- Over ten years this is a potential saving of £368,000 (\$659,000) for 100 illuminators

**Remember: LED's also provide increased site security!**

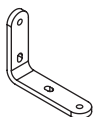
# BRACKET OPTIONS

## STANDARD BRACKETRY



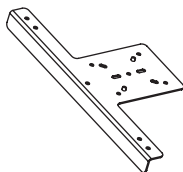
Raytec illuminators are supplied with an Adaptive Illumination (AI bracket) to allow alteration of the beam angle, and a small circular U bracket which allows for up/down and left/right adjustment when fitted to a flat surface. The RAYMAX 25 and RAYLUX 25 are provided with a U bracket only.

## WALL MOUNT



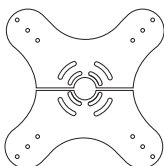
When mounting to a wall the WB1 wall bracket can be used. The WB1 is a small L shaped bracket which provides up/down and left/right adjustment when used with the standard bracketry on Raytec illuminators.

## PTZ MOUNT



The best solution for mounting with PTZ cameras is a flat sandwich bracket that fits between the camera housing and the PTZ motor. This bracket can have either one protruding arm for single unit installations (SB1), or two protruding arms for twin unit installations (DB2).

## DOME MOUNT



Raytec provide the PB-180 and PB-360 brackets for mounting with dome cameras. These brackets are 180 or 360° circular sandwich plates that fit between the top of a pole and the dome camera. The PB-180 and PB-360 have 2" PCD and 4" PCD mounting connections.

# PSU OPTIONS

All Raytec PSU's deliver current controlled output. They are specifically designed to provide a high level of functionality and reliability.

## STANDARD PSU



Standard Raytec PSU's are provided with power adjust functionality (0-100%), an externally rated photocell with photocell sensitivity adjustment, and a telemetry input to allow the unit to be controlled via an external trigger.

- **ADJUSTABLE POWER**  
Greater on scene flexibility reduce over illumination
- **ADJUSTABLE PHOTOCELL**  
Accommodate for different light environments
- **TELEMETRY INPUT**  
Switch on via PIR or central control room

## PREMIUM PSU



The Premium PSU includes all the features of the standard PSU plus a photocell following contact and a 12vdc output (for cameras etc). The photocell following contact can be used to switch day / night cameras into black and white mode in conjunction with the illuminator.

Standard PSU features PLUS:

- **12V DC OUTPUT**  
Suitable for LV camera supply
- **PHOTOCELL FOLLOWING CONTACT**  
Can be used to switch Day/Night cameras to black & white mode

## PULSED PSU



The Pulsed PSU is specifically designed to pulse Raytec illuminators in sync with cameras. It contains power adjustment, 12vdc output to power cameras and video in/out connections to sync pulse timing with the camera.

- **SYNCHRONISED LED PULSING WITH CAMERA**  
Ideal for specialist lighting application such as machine vision and ANPR/LPR
- **12V DC OUTPUT**  
Suitable for LV camera supply
- **ADJUSTABLE POWER**  
Greater on scene flexibility reduce over illumination

**NOTE:** Multiple PSUs are available to power multiple Raymax and Raylux units. Low voltage PSUs available for 25 and 50 series lamps.

# LIGHTING FOR DOMES



Most crimes happen at night, yet this is when CCTV systems are most vulnerable. Research indicates that fully functional Domes are most at risk because of a lack of 'fit for purpose, dedicated lighting'. Providing illumination for domes is a challenge because the light does not follow the movement of the camera.

## **WHY IS LIGHTING A PROBLEM FOR FULLY FUNCTIONAL DOMES? -**

There are two main issues to consider when providing lighting for Domes.

Firstly, fitting illumination to a Dome camera is more difficult than fitting illumination to a pan and tilt system. Dome lighting cannot be fitted to follow the movement of the camera. Consequently, many installations simply omit the use of dedicated lighting, or pass the responsibility (and of course the revenue) to the electrician to fit general wide area illumination which is not fit for purpose.

### **TECHNICAL TIP**

Raytec provide bracketry solutions to allow CCTV lighting to be fitted to dome cameras.

The net result is that the night-time performance of dome cameras is compromised by a lack of dedicated CCTV lighting. Often the end user is simply asked to accept the quality of night-time pictures given from ambient light sources such as street lighting. The need for dedicated CCTV lighting is clear. Ambient lighting can actually reduce the picture quality of many systems by producing uneven illumination, bad colour rendition and "hot spots" within the image. Of course, this is hardly surprising given that street lighting and other on scene sources are not designed for the CCTV camera. The extra investment in CCTV lighting can double the effectiveness of a Dome system, providing high quality images 24/7, not just during daylight conditions.

The second problem with Dome cameras is their sensitivity. Dome cameras tend to use smaller CCD's, and are sometimes fitted with smoked domes, leading to lower performance in low light conditions. Fully functional Domes are also frequently supplied with integral zoom lenses that have a higher F-stop which further reduce light transmission. They are not as efficient as full format lenses. This makes it even more important for dome cameras to be accompanied with high performance, dedicated CCTV lighting.



## GENERAL CONSIDERATIONS

**COLOUR OR MONOCHROME?** Are colour or monochrome images preferred at night? In many instances the end user would prefer colour images but care must be given to provide true colour with a colour corrected illuminator. For example, many installers will be familiar with the yellow light provided by low pressure sodium street lighting. Using incorrect White-Light can actually damage the performance of a CCTV system leading to inaccurate colour rendition – a camera is only as good as the available illumination.

Infra-Red should be used where White-Light would be too intrusive, where covert lighting is needed, or where longer illumination distances are required. Of course, many cameras now switch between colour during the day and mono for night time operation to give the best of both worlds.

### TECHNICAL TIP

White-Light is actually a combination of lights in the visible spectrum between 400-700nm. When these colours are found together they are perceived as White-Light. Infra-Red is a light just beyond the visible spectrum that the monochrome camera can see but the human eye cannot. It is typically 700-1,000nm.



RAYLUX - White-Light

Raytec provide a full range of Infra-Red and White-Light illuminators for use with any CCTV camera.



RAYMAX - Infra-Red

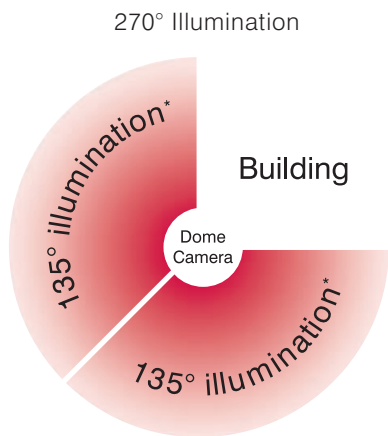
**MAINTENANCE AND RUNNING COSTS** - CCTV Lighting should always be energy efficient and provide low maintenance. With traditional bulb based lighting, operational costs significantly overshadow the cost of purchase and installation. Consider a 500W flood light that achieves an average bulb life of 3 months. The electrical costs are astronomical and every three months there are additional costs for labour and replacement bulbs.

The latest LED technology available from Raytec offers significant savings on running and maintenance costs. LED illuminators have a life expectancy beyond 10 years and require no ongoing maintenance. However, not all LED illuminators are created equal. New surface mount technology (SMT) LED's deliver even greater product life and greater efficiency levels.

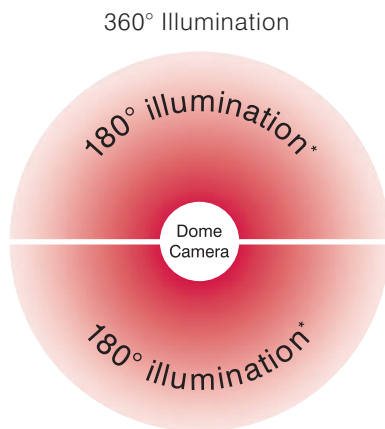
## THE SOLUTIONS

**1: WIDE ANGLE LIGHTING** - Achieving 360° degree lighting for Domes has traditionally been very expensive, requiring multiple illuminators. However, Raytec have recently launched a series of wide angle illuminators purpose designed for fully functional Domes. The new wide angle illuminators are available in RAYMAX (Infra-Red) and RAYLUX (White-Light) variations and are fitted with Adaptive Illumination™ providing vari-focal lighting. Adaptive Illumination™ is a new concept introduced and patented by Raytec allowing the installer to adjust the horizontal beam angle on site to match the specific needs of the installation.

Raytec's specialist wide angle illuminators provide 120 to 180° degree illumination meaning it is now possible to illuminate up to 360 degrees at significantly less cost and with less installation effort than ever before using only 2 illuminators. Wide angle illumination is technically the best solution to Dome illumination providing purpose designed, even illumination fitted at the camera.



\*provided by 120-180° Adaptive Illumination™



\*provided by 120-180° Adaptive Illumination™

**2: TARGET AREA ILLUMINATION** - When a Dome is only concerned with specific security “hot-spots”, or to meet budgetary restraints, illumination can be targeted at specific vulnerable areas. Typically the Dome will track these areas on a pre-set tour and lighting can be used to illuminate each pre-set position such as an entrance point, or a very low lit area.

This method allows for greater distances to be covered with narrower angle illuminators. Using Adaptive Illumination™ the exact beam angle from the illuminator can be adjusted on site to suit each pre-set position.

**3: LOCAL AREA ILLUMINATION** - If lighting cannot be fitted at the dome then it can be positioned at sensitive areas to flood the area of concern. This is local area illumination and the critical factor is to ensure that, when the dome is zoomed into the scene, the full screen is well illuminated.

## SUMMARY

Lighting is critical to the performance of every CCTV system, especially those using fully functional Domes. Recent developments by Raytec make 360° degree illumination possible for the first time and installers also have the option of providing Target Area Illumination or Local Area Illumination where needed. Every dome camera now has the opportunity to be fitted with dedicated CCTV lighting to maximise performance.

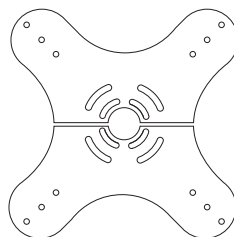
### **NEW - RAYMAX 300 & RAYLUX 300**

Perfect for dome applications.



### **NEW - PB180 & PB360 BRACKET**

Easy installation for dome applications.



## INFRA-RED PRODUCT RANGE

The RM300 is the latest generation of the RAYMAX series, **designed specifically to work in conjunction with fully functional domes.** RM300 provides World class performance, long life and ultra low maintenance. RM300 incorporates the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

The unique Adaptive Illumination™ concept provides the flexibility to alter the angle of illumination on site to suit specific security needs and to match the camera's field of view. RAYMAX illuminators are also purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYMAX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RAYMAX 300 is suitable for all low light installations up to 350 metres. (1150ft)



### POWERFUL

- Distances up to 370m (1,214ft)
- Latest LED technology
- 180° coverage up to 100m
- 360° coverage with only 2 units

### FLEXIBLE

- Adaptive Illumination™
- Various Angles (10° to 180°+)
- Fully Controllable Power Supply

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal Resistant

### CONTROLLED

- Zero Light Pollution
- Even Output Illumination
- Semi-Covert or Covert Options

### 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!



## TECHNICAL SPECIFICATIONS

### ILLUMINATOR

<i>Max Distance:</i>	up to 370m (1,214ft)
<i>Angle:</i>	Various - See Part Codes
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	120W max
<i>Voltage:</i>	13.5V current controlled
<i>Weight:</i>	6kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Black
<i>Wavelength:</i>	850 or 950nm or white-light
<i>Dimensions:</i>	420mm x 195mm x 66mm 16" x 8" x 3" approx

### BRACKETRY

U Bracket and Adaptive Illumination bracket included.

PB-360 Pole Bracket - 360° to mount up to 4 units

PB-180 Pole Bracket - 180° to mount up to 2 units

### POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	120W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	2.4Kg
<i>Dimensions:</i>	240mm x 160mm x 81mm 9" x 6" x 3" approx

### Standard PSU (included)

Adjustable photocell

Adjustable power output for IR

Telemetry Control

### Premium PSU (add ~PR to part code)

All standard PSU features PLUS:

Photocell following contact for switching of dual mode cameras

12V dc output to power cameras

### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.

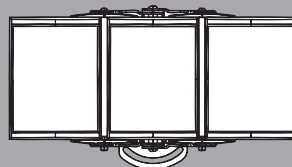
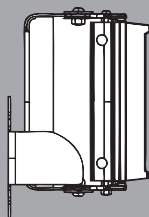
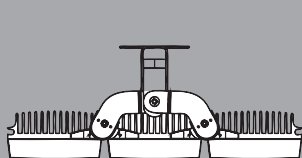
Power Adjustment

Video In and Video Out connections to sync light and camera,

12V dc output to power cameras

### PART CODES & DISTANCES

			NARROW ANGLE	WIDE ANGLE
RM300-AI-10	RAYMAX 300, 10-20 degree	AI, 850nm	370m (1,214ft)	220m (722ft)
RM300-AI-30	RAYMAX 300, 30-60 degree	AI, 850nm	200m (656ft)	120m (394ft)
RM300-AI-50	RAYMAX 300, 50-180 degree	AI, 850nm	140m (460ft)	100m (328ft)
RM300-AI-120	RAYMAX 300, 120-180+ degree	AI, 850nm	80m (262ft)	50m (164ft)
RM300-AI-10-C	RAYMAX 300, 10-20 degree	AI, 950nm	Contact Raytec	
RM300-AI-30-C	RAYMAX 300, 30-60 degree	AI, 950nm	Contact Raytec	
RM300-AI-50-C	RAYMAX 300, 50-180 degree	AI, 950nm	Contact Raytec	
RM300-AI-120-C	RAYMAX 300, 120-180+ degree	AI, 950nm	Contact Raytec	



## APPLICATIONS

PRISONS



WATER RESERVOIRS



INDUSTRIAL PARK



DOMES SYSTEM



POWER PLANTS





## INFRA-RED PRODUCT RANGE

The RAYMAX series of High Performance Infra-Red LED illuminators provide class leading performance, long life and ultra low maintenance. They incorporate the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

The unique Adaptive Illumination™ concept provides the flexibility to alter the angle of illumination on site to suit specific security needs and to match the camera's field of view. RAYMAX illuminators are also purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYMAX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RAYMAX 200 is suitable for all low light installations up to 300 metres (985ft).

### ADAPTIVE ILLUMINATION™



Narrow Angle



Wide Angle



### POWERFUL

- Distances up to 300m (985ft)
- Latest LED technology
- High power - low running costs

### FLEXIBLE

- Adaptive Illumination™
- Various angles (10° to 180°)
- Fully Controllable Power Supply

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal resistant

### CONTROLLED

- Zero Light Pollution
- Even Output Illumination
- Semi-Covert (850nm) or Covert (950nm) Options

### 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!



# TECHNICAL SPECIFICATIONS

## ILLUMINATOR

<i>Max Distance:</i>	up to 300m (985ft)
<i>Angle:</i>	Various - See Part Codes
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	80W max
<i>Voltage:</i>	13.5V current controlled
<i>Weight:</i>	4kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Black
<i>Wavelength:</i>	850 or 950nm
<i>Dimensions:</i>	280 x 195 x 66mm 11" x 8" x 3" approx

## BRACKETRY

U Bracket and Adaptive Illumination bracket included.

## POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	80W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	0.9Kg
<i>Dimensions:</i>	160mm x 160mm x 90mm 6" x 6" x 4" approx

### Standard PSU (included)

Adjustable photocell  
Adjustable power output for IR  
Telemetry Control

### Premium PSU (add ~PR to part code)

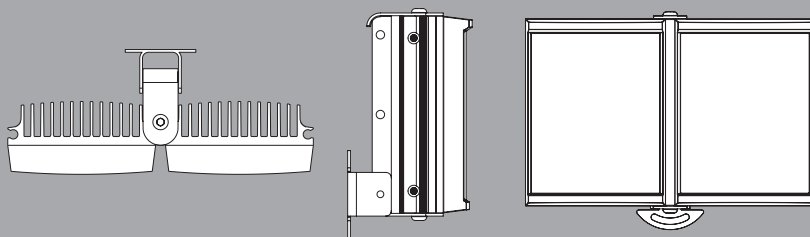
All standard PSU features PLUS:  
Photocell following contact for switching of dual  
mode cameras  
12V dc output to power cameras

### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.  
Power Adjustment  
Video In and Video Out connections to sync  
light and camera,  
12V dc output to power cameras

## PART CODES & DISTANCES

			NARROW ANGLE	WIDE ANGLE
RM200-AI-10	RAYMAX 200, 10-20°	AI, 850nm + PSU	300m (985ft)	200m (656ft)
RM200-AI-30	RAYMAX 200, 30-60°	AI, 850nm + PSU	160m (525ft)	106m (346ft)
RM200-AI-50	RAYMAX 200, 50-100°	AI, 850nm + PSU	112m (367ft)	74m (243ft)
RM200-AI-120	RAYMAX 200, 120-180°	AI, 850nm + PSU	64m (210ft)	42m (139ft)
RM200-AI-10-C	RAYMAX 200, 10-20°	AI, 950nm + PSU	Contact Raytec	
RM200-AI-30-C	RAYMAX 200, 30-60°	AI, 950nm + PSU	Contact Raytec	
RM200-AI-50-C	RAYMAX 200, 50-100°	AI, 950nm + PSU	Contact Raytec	
RM200-AI-120-C	RAYMAX 200, 120-180°	AI, 950nm + PSU	Contact Raytec	



## APPLICATIONS

PRISONS



WATER RESERVOIRS



INDUSTRIAL PARK



DOMES SYSTEM



POWER PLANTS





## INFRA-RED PRODUCT RANGE

The RAYMAX series of High Performance Infra-Red LED illuminators provide class leading performance, long life and ultra low maintenance. They incorporate the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

The unique Adaptive Illumination™ concept provides the flexibility to alter the angle of illumination on site to suit specific security needs and to match the camera's field of view. RAYMAX illuminators are also purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYMAX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RAYMAX 100 is suitable for all low light installations up to 150 metres (492ft).

### ADAPTIVE ILLUMINATION™



Narrow Angle



Wide Angle



### POWERFUL

- Distances up to 150m (492ft)
- Latest LED technology
- High power - low running costs

### FLEXIBLE

- Adaptive Illumination™
- Various angles (10° to 180°)
- Fully Controllable Power Supply

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal resistant

### CONTROLLED

- Zero Light Pollution
- Even Output Illumination
- Semi-Covert (850nm) or Covert (950nm) Options

### 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!





# TECHNICAL SPECIFICATIONS

## ILLUMINATOR

<i>Max Distance:</i>	up to 150m (492ft)
<i>Angle:</i>	Various - See Part Codes
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	50W max
<i>Voltage:</i>	13.5V current controlled
<i>Weight:</i>	2.5kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Black
<i>Wavelength:</i>	850 or 950nm
<i>Dimensions:</i>	210 x 150 x 65mm 8" x 6" x 3" approx

## BRACKETRY

U Bracket and Adaptive Illumination bracket included.

## POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	50W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	1.5Kg
<i>Dimensions:</i>	160mm x 160mm x 90mm 6" x 6" x 4" approx

### Standard PSU (included)

Adjustable photocell  
Adjustable power output for IR  
Telemetry Control

### Premium PSU (add ~PR to part code)

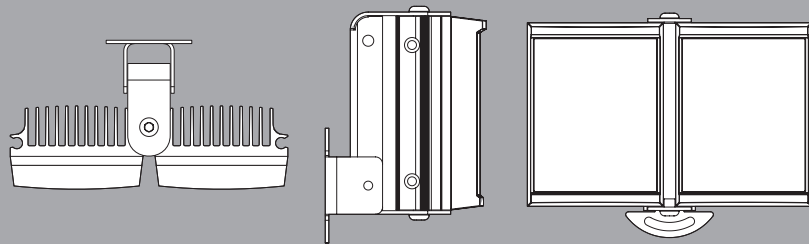
All standard PSU features PLUS:  
Photocell following contact for switching of dual  
mode cameras  
12V dc output to power cameras

### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.  
Power Adjustment  
Video In and Video Out connections to sync  
light and camera,  
12V dc output to power cameras

## PART CODES & DISTANCES

			NARROW ANGLE	WIDE ANGLE
RM100-AI-10	RAYMAX 100, 10-20°	AI, 850nm + PSU	150m (492ft)	100m (328ft)
RM100-AI-30	RAYMAX 100, 30-60°	AI, 850nm + PSU	80m (262ft)	53m (173ft)
RM100-AI-50	RAYMAX 100, 50-100°	AI, 850nm + PSU	56m (184ft)	37m (121ft)
RM100-AI-120	RAYMAX 100, 120-180°	AI, 850nm + PSU	32m (105ft)	21m (69ft)
RM100-AI-10-C	RAYMAX 100, 10-20°	AI, 950nm + PSU	Contact Raytec	
RM100-AI-30-C	RAYMAX 100, 30-60°	AI, 950nm + PSU	Contact Raytec	
RM100-AI-50-C	RAYMAX 100, 50-100°	AI, 950nm + PSU	Contact Raytec	
RM100-AI-120-C	RAYMAX 100, 120-180°	AI, 950nm + PSU	Contact Raytec	



## APPLICATIONS

MILITARY BASE



AIRPORTS



INDUSTRIAL PARK



DOME SYSTEM



POWER PLANTS



## INFRA-RED PRODUCT RANGE

The RAYMAX series of High Performance Infra-Red LED illuminators provide class leading performance, long life and ultra low maintenance. They incorporate the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

The unique Adaptive Illumination™ concept provides the flexibility to alter the angle of illumination on site to suit specific security needs and to match the camera's field of view. RAYMAX illuminators are also purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYMAX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RAYMAX 50 is suitable for all low light installations up to 75 metres (246ft).

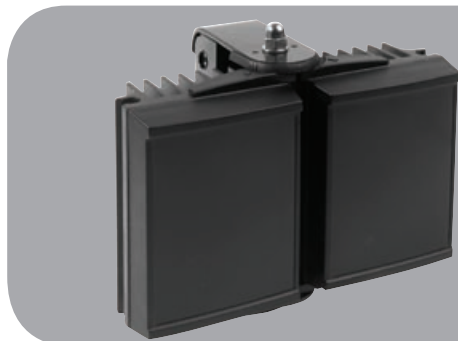
### ADAPTIVE ILLUMINATION™



Narrow Angle



Wide Angle



### POWERFUL

- Distances up to 75m (246ft)
- Latest LED technology
- High power - low running costs

### FLEXIBLE

- Adaptive Illumination™
- Various angles (10° to 180°)
- Fully Controllable Power Supply

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal resistant

### CONTROLLED

- Zero Light Pollution
- Even Output Illumination
- Semi-Covert (850nm) or Covert (950nm) Options

### 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!



## TECHNICAL SPECIFICATIONS

### ILLUMINATOR

<i>Max Distance:</i>	up to 75m (246ft)
<i>Angle:</i>	Various - See Part Codes
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	20W max
<i>Voltage:</i>	13.5V current controlled
<i>Weight:</i>	1.7kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Black
<i>Wavelength:</i>	850 or 950nm
<i>Dimensions:</i>	160 x 115 x 54mm 6" x 4" x 2" approx

### BRACKETRY

U Bracket and Adaptive Illumination bracket included.

### POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	20W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	0.9Kg
<i>Dimensions:</i>	160mm x 120mm x 80mm 6" x 5" x 3" approx

#### Standard PSU (included)

Adjustable photocell  
Adjustable power output for IR  
Telemetry Control

#### Premium PSU (add ~PR to part code)

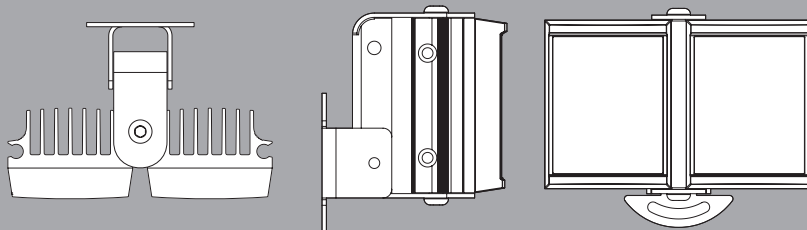
All standard PSU features PLUS:  
Photocell following contact for switching of dual  
mode cameras  
12V dc output to power cameras

#### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.  
Power Adjustment  
Video In and Video Out connections to sync  
light and camera,  
12V dc output to power cameras

### PART CODES & DISTANCES

			NARROW ANGLE	WIDE ANGLE
RM50-AI-10	RAYMAX 50, 10-20°	AI, 850nm + PSU	75m (246ft)	50m (164ft)
RM50-AI-30	RAYMAX 50, 30-60°	AI, 850nm + PSU	40m (131ft)	26m (87ft)
RM50-AI-50	RAYMAX 50, 50-100°	AI, 850nm + PSU	28m (92ft)	18m (61ft)
RM50-AI-120	RAYMAX 50, 120-180°	AI, 850nm + PSU	16m (52ft)	11m (35ft)
RM50-AI-10-C	RAYMAX 50, 10-20°	AI, 950nm + PSU	Contact Raytec	Contact Raytec
RM50-AI-30-C	RAYMAX 50, 30-60°	AI, 950nm + PSU	Contact Raytec	Contact Raytec
RM50-AI-50-C	RAYMAX 50, 50-100°	AI, 950nm + PSU	Contact Raytec	Contact Raytec
RM50-AI-120-C	RAYMAX 50, 120-180°	AI, 950nm + PSU	Contact Raytec	Contact Raytec



## APPLICATIONS

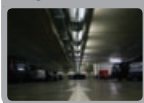
INDUSTRIAL PARK



DOME SYSTEM



CAR PARK



HIGH END RESIDENTIAL



DUMPING



## INFRA-RED PRODUCT RANGE

The RAYMAX series of High Performance Infra-Red LED illuminators provide class leading performance, long life and ultra low maintenance. They incorporate the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

Purpose designed to provide even output illumination, RAYMAX 25 is available in a number of different fixed angle variations to handle most standard installations.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYMAX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RAYMAX 25 is suitable for all low light installations up to 35 metres (115ft).

**RAYMAX 25 is also available with low voltage PSU.**



### POWERFUL

- Distances up to 35m (115ft)
- Latest LED technology
- High power - low running costs

### FLEXIBLE

- Various angles (10°, 30°, 50°, or 120°)
- Fully Controllable Power Supply
- Optional Low Voltage PSU

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal resistant

### CONTROLLED

- Zero Light Pollution
- Even Output Illumination
- Semi-Covert (850nm) or Covert (950nm) Options

### 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!



# TECHNICAL SPECIFICATIONS

## ILLUMINATOR

<i>Max Distance:</i>	up to 35m (115ft)
<i>Angle:</i>	30, 50 or 120 degrees
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	10W max
<i>Voltage:</i>	13.5V current controlled
<i>Weight:</i>	1.0kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Black
<i>Wavelength:</i>	850 or 950nm
<i>Dimensions:</i>	75 x 100 x 54mm 3" x 4" x 2" approx

## BRACKETRY

U Bracket included.

## POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	10W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	0.9Kg
<i>Dimensions:</i>	160mm x 120mm x 80mm 6" x 5" x 3" approx

### Standard PSU (included)

Adjustable photocell  
Adjustable power output for IR  
Telemetry Control

### Premium PSU (add ~PR to part code)

All standard PSU features PLUS:  
Photocell following contact for switching of dual  
mode cameras  
12V dc output to power cameras

### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.  
Power Adjustment  
Video In and Video Out connections to sync  
light and camera,  
12V dc output to power cameras

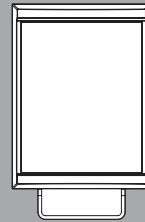
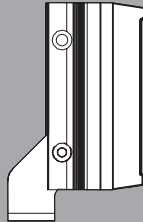
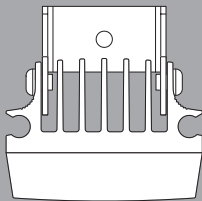
## PART CODES

RM25-10	RAYMAX 25, 10°
RM25-30	RAYMAX 25, 30°
RM25-50	RAYMAX 25, 50°
RM25-120	RAYMAX 25, 120°
RM25-10-C	RAYMAX 25, 10°
RM25-30-C	RAYMAX 25, 30°
RM25-50-C	RAYMAX 25, 50°
RM25-120-C	RAYMAX 25, 120°

AI, 850nm + PSU
AI, 850nm + PSU
AI, 850nm + PSU
AI, 850nm + PSU
AI, 950nm + PSU
AI, 950nm + PSU
AI, 950nm + PSU
AI, 950nm + PSU

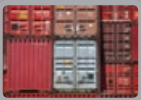
## DISTANCES

35m (115ft)
20m (66ft)
14m (46ft)
8m (26ft)
Contact Raytec
Contact Raytec
Contact Raytec
Contact Raytec



## APPLICATIONS

HOLDING BAYS



GRAFFITI



DUMPING



CAR PARK



HIGH END RESIDENTIAL



## WHITE-LIGHT PRODUCT RANGE

The RL300 is the latest generation of the RAYLUX series, **designed specifically to work in conjunction with colour dome cameras.** RL300 provides World class performance, long life and ultra low maintenance. RL300 incorporates to very latest surface mount LED's to deliver excellent night-time pictures and outstanding reliability.

The unique Adaptive Illumination™ concept provides the flexibility to alter the angle of illumination on site to suit specific security needs and to match the cameras field of view. RAYLUX illuminators are also purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYLUX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RL300 is suitable for all low light installations using colour cameras.



### POWERFUL

- Distances up to 150m (492ft)
- Latest LED technology
- 360° coverage with only 2 units

### FLEXIBLE

- Adaptive Illumination™
- Various angles (10° to 180°+)
- Fully Controllable Power Supply

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal Resistant

### CONTROLLED

- Excellent Colour Rendition
- Even Output Illumination
- Low Running Costs

### 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!



# TECHNICAL SPECIFICATIONS

## ILLUMINATOR

<i>Max Distance:</i>	up to 150m (492ft)
<i>Angle:</i>	Various - See Part Codes
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	120W max
<i>Voltage:</i>	14V current controlled
<i>Weight:</i>	6kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Silver
<i>Wavelength:</i>	White-Light
<i>Dimensions:</i>	420 x 195 x 66mm 16" x 8" x 3" approx

## BRACKETRY

U Bracket and Adaptive Illumination bracket included.  
 PB-360 Pole Bracket - 360° to mount up to 4 units  
 PB-180 Pole Bracket - 180° to mount up to 2 units

## POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	120W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	2.4Kg
<i>Dimensions:</i>	240mm x 160mm x 81mm 9" x 6" x 3" approx

### Standard PSU (included)

Adjustable photocell  
 Adjustable power output for IR  
 Telemetry Control

### Premium PSU (add ~PR to part code)

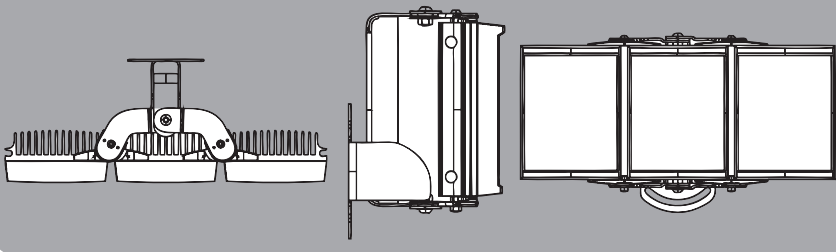
All standard PSU features PLUS:  
 Photocell following contact for switching of dual  
 mode cameras  
 12V dc output to power cameras

### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.  
 Power Adjustment  
 Video In and Video Out connections to sync  
 light and camera,  
 12V dc output to power cameras

## PART CODES & DISTANCES

			NARROW ANGLE	WIDE ANGLE
RL300-AI-10	RAYLUX 300, 10-30 degree	AI, White-light	150m (492ft)	100m (328ft)
RL300-AI-30	RAYLUX 300, 30-90 degree	AI, White-light	75m (246ft)	50m (164ft)
RL300-AI-50	RAYLUX 300, 50-180 degree	AI, White-light	50m (165ft)	34m (112ft)
RL300-AI-120	RAYLUX 300, 120-180+ degree	AI, White-light	30m (98ft)	20m (66ft)



## APPLICATIONS

### PRISONS



### WATER RESERVOIRS



### INDUSTRIAL PARK



### DOMES SYSTEM



### POWER PLANTS



## WHITE-LIGHT PRODUCT RANGE

Designed to be used with colour or day / night cameras the RAYLUX series of High Performance White-Light LED illuminators provide class leading performance, long life, energy efficiency and ultra low maintenance. They incorporate the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

The unique Adaptive Illumination™ concept provides the flexibility to alter the angle of illumination on site to suit specific security needs and to match the camera's field of view. RAYLUX illuminators are also purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYLUX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RAYLUX 200 is designed for low light installations up to 120m (394ft).

### ADAPTIVE ILLUMINATION™



Narrow Angle



Wide Angle



## POWERFUL

- Distances up to 120m (394ft)
- Latest LED technology
- High Power - Low Running Costs

## FLEXIBLE

- Adaptive Illumination™
- Various angles (10° to 180°)
- Fully Controllable Power Supply

## RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal resistant

## CONTROLLED

- Excellent Colour Rendition
- Even Output Illumination
- Low Running Costs

### 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!





# TECHNICAL SPECIFICATIONS

## ILLUMINATOR

<i>Max Distance:</i>	up to 120m (394ft)
<i>Angle:</i>	Various - See Part Codes
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	80W max
<i>Voltage:</i>	14V current controlled
<i>Weight:</i>	4kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Black
<i>Wavelength:</i>	White-Light
<i>Dimensions:</i>	280 x 195 x 66mm 11" x 8" x 3" approx

## BRACKETRY

U Bracket and Adaptive Illumination bracket included.

## POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	80W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	1.8Kg
<i>Dimensions:</i>	160mm x 160mm x 90mm 6" x 6" x 4" approx

### Standard PSU (included)

Adjustable photocell  
Adjustable power output for IR  
Telemetry Control

### Premium PSU (add ~PR to part code)

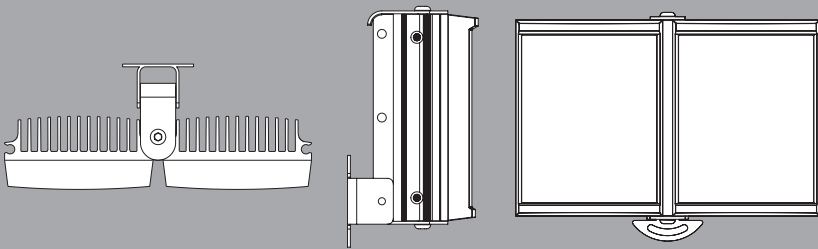
All standard PSU features PLUS:  
Photocell following contact for switching of dual  
mode cameras  
12V dc output to power cameras

### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.  
Power Adjustment  
Video In and Video Out connections to sync  
light and camera,  
12V dc output to power cameras

## PART CODES & DISTANCES

			NARROW ANGLE	WIDE ANGLE
RL200-AI-10	RAYLUX 200, 10-20°	AI, white-light + PSU	120m (394ft)	80m (262ft)
RL200-AI-30	RAYLUX 200, 30-60°	AI, white-light + PSU	60m (197ft)	40m (130ft)
RL200-AI-50	RAYLUX 200, 50-100°	AI, white-light + PSU	42m (138ft)	28m (91ft)
RL200-AI-120	RAYLUX 200, 120-180°	AI, white-light + PSU	24m (79ft)	16m (52ft)



## APPLICATIONS

PRISONS



WATER RESERVOIRS



INDUSTRIAL PARK



DOME SYSTEM



POWER PLANTS



## WHITE-LIGHT PRODUCT RANGE

Designed to be used with colour or day / night cameras the RAYLUX series of High Performance White-Light LED illuminators provide class leading performance, long life, energy efficiency and ultra low maintenance. They incorporate the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

The unique Adaptive Illumination™ concept provides the flexibility to alter the angle of illumination on site to suit specific security needs and to match the camera's field of view. RAYLUX illuminators are also purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYLUX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RAYLUX 100 is designed for low light installations up to 80m (262ft).

### ADAPTIVE ILLUMINATION™



Narrow Angle



Wide Angle



## POWERFUL

- Distances up to 80m (262ft)
- Latest LED technology
- High Power - Low Running Costs

## FLEXIBLE

- Adaptive Illumination™
- Various angles (10° to 180°)
- Fully Controllable Power Supply

## RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal resistant

## CONTROLLED

- Excellent Colour Rendition
- Even Output Illumination
- Low running costs

### 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!



# TECHNICAL SPECIFICATIONS

## ILLUMINATOR

<i>Max Distance:</i>	up to 80m (262ft)
<i>Angle:</i>	Various - See Part Codes
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	50W max
<i>Voltage:</i>	14V current controlled
<i>Weight:</i>	4kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Silver
<i>Wavelength:</i>	White-Light
<i>Dimensions:</i>	210 x 150 x 65mm 8" x 6" x 3" approx

## BRACKETRY

U Bracket and Adaptive Illumination bracket included.

## POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	50W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	1.5Kg
<i>Dimensions:</i>	160mm x 160mm x 90mm 6" x 6" x 4" approx

### Standard PSU (included)

Adjustable photocell  
Adjustable power output for IR  
Telemetry Control

### Premium PSU (add ~PR to part code)

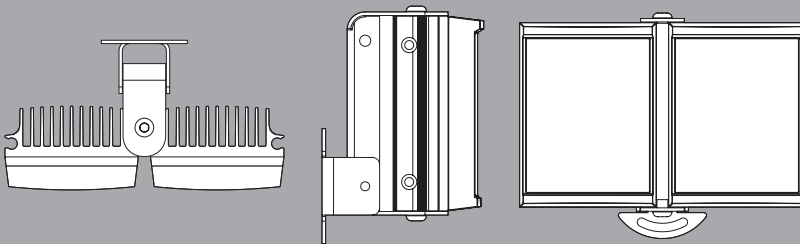
All standard PSU features PLUS:  
Photocell following contact for switching of dual  
mode cameras  
12V dc output to power cameras

### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.  
Power Adjustment  
Video In and Video Out connections to sync  
light and camera,  
12V dc output to power cameras

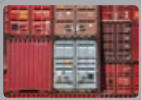
## PART CODES & DISTANCES

			NARROW ANGLE	WIDE ANGLE
RL100-AI-10	RAYLUX 100, 10-20°	AI, white-light + PSU	80m (262ft)	53m (173ft)
RL100-AI-30	RAYLUX 100, 30-60°	AI, white-light + PSU	42m (138ft)	28m (91ft)
RL100-AI-50	RAYLUX 100, 50-100°	AI, white-light + PSU	30m (98ft)	20m (65ft)
RL100-AI-120	RAYLUX 100, 120-180°	AI, white-light + PSU	18m (59ft)	12m (39ft)



## APPLICATIONS

HOLDING BAYS



AIRPORTS



INDUSTRIAL PARK



DOMES SYSTEM



POWER PLANTS



## WHITE-LIGHT PRODUCT RANGE

Designed to be used with colour or day / night cameras the RAYLUX series of High Performance White-Light LED illuminators provide class leading performance, long life, energy efficiency and ultra low maintenance. They incorporate the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

The unique Adaptive Illumination™ concept provides the flexibility to alter the angle of illumination on site to suit specific security needs and to match the camera's field of view. RAYLUX illuminators are also purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYLUX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RAYLUX 50 is designed for low light installations up to 50m (165ft).

**RAYLUX 50 is also available with low voltage PSU.**

### ADAPTIVE ILLUMINATION™



Narrow Angle



Wide Angle



## POWERFUL

- Distances up to 50m (165ft)
- Latest LED technology
- High Power - Low Running Costs

## FLEXIBLE

- Adaptive Illumination™
- Various angles (10° to 180°)
- Fully Controllable Power Supply

## RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal resistant

## CONTROLLED

- Excellent Colour Rendition
- Even Output Illumination
- Low running costs

## 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!



# TECHNICAL SPECIFICATIONS

## ILLUMINATOR

<i>Max Distance:</i>	up to 50m (165ft)
<i>Angle:</i>	Various - See Part Codes
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	25W max
<i>Voltage:</i>	14V current controlled
<i>Weight:</i>	4kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Silver
<i>Wavelength:</i>	White-Light
<i>Dimensions:</i>	160 x 115 x 54mm 6" x 4" x 2" approx

## BRACKETRY

U Bracket and Adaptive Illumination bracket included.

## POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	25W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	0.9Kg
<i>Dimensions:</i>	160mm x 120mm x 80mm 6" x 5" x 3" approx

### Standard PSU (included)

Adjustable photocell  
Adjustable power output for IR  
Telemetry Control

### Premium PSU (add ~PR to part code)

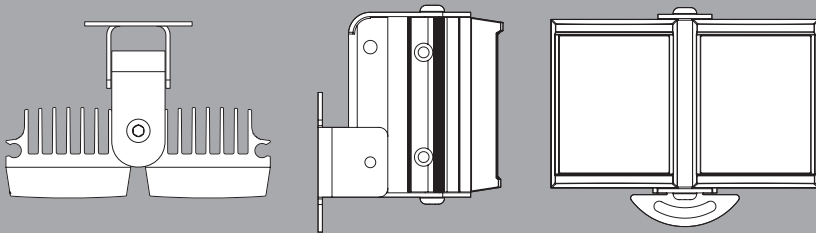
All standard PSU features PLUS:  
Photocell following contact for switching of dual  
mode cameras  
12V dc output to power cameras

### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.  
Power Adjustment  
Video In and Video Out connections to sync  
light and camera,  
12V dc output to power cameras

## PART CODES & DISTANCES

			NARROW ANGLE	WIDE ANGLE
RL50-AI-10	RAYLUX 50, 10-20°	AI, white-light + PSU	50m (165ft)	33m (108ft)
RL50-AI-30	RAYLUX 50, 30-60°	AI, white-light + PSU	28m (138ft)	18m (60ft)
RL50-AI-50	RAYLUX 50, 50-100°	AI, white-light + PSU	20m (65ft)	13m (42ft)
RL50-AI-120	RAYLUX 50, 120-180°	AI, white-light + PSU	12m (39ft)	8m (26ft)



## APPLICATIONS

INDUSTRIAL PARK



DOME SYSTEM



CAR PARK



HIGH END RESIDENTIAL



HOLDING BAYS



## WHITE-LIGHT PRODUCT RANGE

Designed to be used with colour or day / night cameras the RAYLUX series of High Performance White-Light LED illuminators provide class leading performance, long life, energy efficiency and ultra low maintenance. They incorporate the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

The unique Adaptive Illumination™ concept provides the flexibility to alter the angle of illumination on site to suit specific security needs and to match the camera's field of view. RAYLUX illuminators are also purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

RAYLUX illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. RAYLUX 25 is designed for low light installations up to 30m (98ft).

**RAYLUX 25 is also available with low voltage PSU.**



### POWERFUL

- Distances up to 30m (98ft)
- Latest LED technology
- High Power - Low Running Costs

### FLEXIBLE

- Various Angles (10, 30, 50 or 120°)
- Fully Controllable Power Supply
- Optional Low Voltage PSU

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal resistant

### CONTROLLED

- Excellent Colour Rendition
- Even Output Illumination
- Low Running Costs

### 5 YEAR WARRANTY

All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!



# TECHNICAL SPECIFICATIONS

## ILLUMINATOR

<i>Max Distance:</i>	up to 30m (98ft)
<i>Angle:</i>	120 degrees standard
<i>Optics:</i>	SMT LED's
<i>Consumption:</i>	15W max
<i>Voltage:</i>	14V current controlled
<i>Weight:</i>	4kg
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Cable Length:</i>	2.5m
<i>Colour:</i>	Silver
<i>Wavelength:</i>	White-Light
<i>Dimensions:</i>	75 x 100 x 54mm 3" x 4" x 2" approx

## BRACKETRY

U Bracket included.

## POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	15W max
<i>Temperature:</i>	-50 to +50°C (-58 to 122°F)
<i>Weight:</i>	0.9Kg
<i>Dimensions:</i>	160mm x 120mm x 80mm 6" x 5" x 3" approx

### Standard PSU (included)

Adjustable photocell  
Adjustable power output for IR  
Telemetry Control

### Premium PSU (add ~PR to part code)

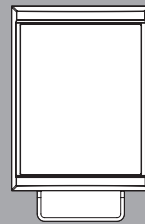
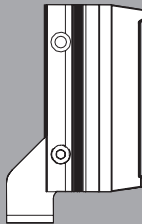
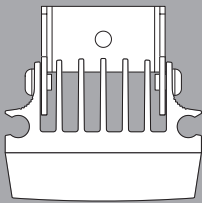
All standard PSU features PLUS:  
Photocell following contact for switching of dual  
mode cameras  
12V dc output to power cameras

### Pulsed PSU (add ~PU to part code)

To pulse Raytec lights in sync with cameras.  
Power Adjustment  
Video In and Video Out connections to sync  
light and camera,  
12V dc output to power cameras

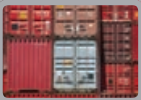
## PART CODES

PART CODES			DISTANCES
RL25-10	RAYLUX 25, 10°	AI, white-light + PSU	30m (98ft)
RL25-30	RAYLUX 25, 30°	AI, white-light + PSU	18m (60ft)
RL25-50	RAYLUX 25, 50°	AI, white-light + PSU	13m (42ft)
RL25-120	RAYLUX 25, 120°	AI, white-light + PSU	8m (26ft)



## APPLICATIONS

HOLDING BAYS



GRAFFITI



DUMPING



CAR PARK



HIGH END RESIDENTIAL



# HYBRID

## HYBRID PRODUCT RANGE

The HYBRID product range integrates RAYMAX Infra-Red and RAYLUX White-Light into a single, flexible lighting unit. The HYBRID series or IR and White-Light illuminators provide World class illumination, long life and ultra low maintenance. They incorporate the very latest surface mount LED's to deliver excellent night-time pictures with improved optical output and outstanding reliability.

HYBRID illuminators are available in a range of different models and angles to suit the specific security needs of any installation. HYBRID illuminators are an integrated, aesthetically pleasing solution to providing multi-purpose lighting. All HYBRID illuminators are purpose designed to provide even output illumination.

Each unit is fitted with a Cool Running™ thermal management system to carefully control LED output and delivers a projected working life of 10 years.

HYBRID illuminators are supplied with bracket and power supply. Control features on the power supply include adjustable power output, photocell and telemetry control. HYBRID products are suitable for all low light installations that require a mixture of Infra-Red and White-Light.



### POWERFUL

- IR and White-Light in a single unit
- Latest LED technology
- High power – low running costs

### FLEXIBLE

- HY300, HY200 or HY100 models
- Various angles (10° to 180°)
- Fully Controllable Power Supply

### RELIABLE

- 10 year life
- Cool Running™ thermal management system
- Vandal Resistant

### CONTROLLED

- Even Output Illumination
- IR for Covert surveillance
- White-Light for Deterrent purposes

### 5 YEAR WARRANTY

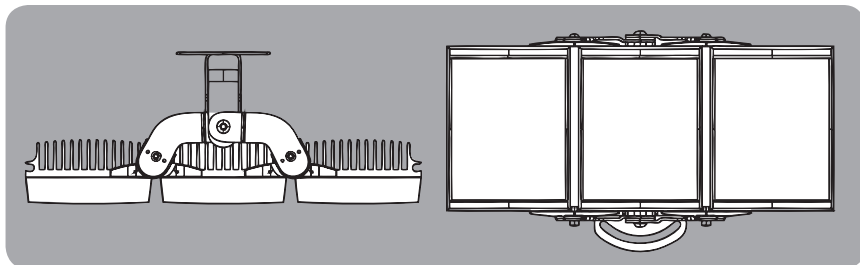
All Raytec LED illuminators are provided with a FIVE year warranty, unmatched anywhere in the CCTV lighting industry. Raytec illuminators provide guaranteed long life!



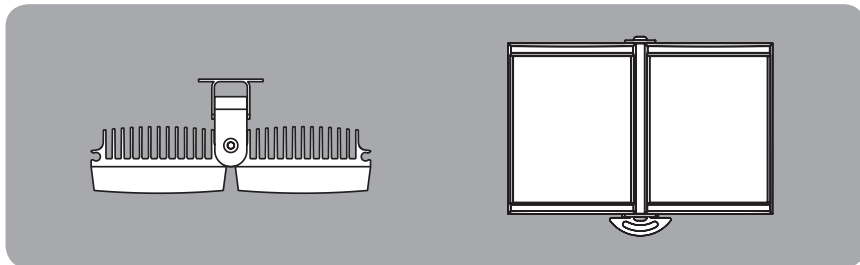


# HYBRID MODELS

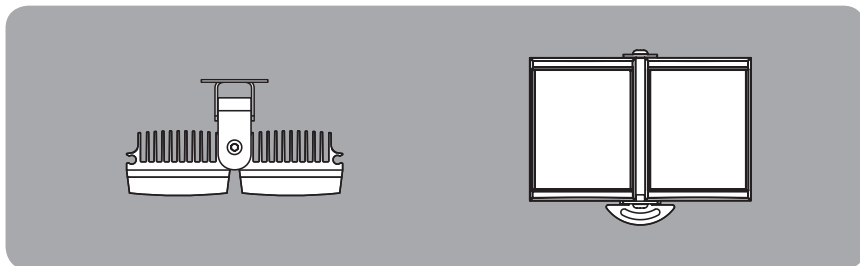
## HY300 (LONG RANGE APPLICATIONS)



## HY200 (MEDIUM - LONG RANGE APPLICATIONS)



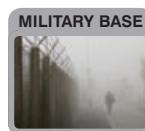
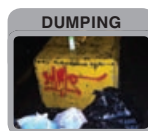
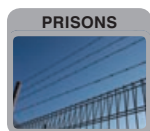
## HY100 (MEDIUM RANGE APPLICATIONS)



## USING HYBRID

HYBRID illuminators have been designed for all applications where both the advantages of Infra-Red (long illumination distances, covert surveillance) and White-Light (lighting as a visible deterrent, colour images) are needed. The Infra-Red light in HYBRID provides constant covert lighting of an area, delivering 24 hour CCTV coverage without causing light pollution or illuminating an area for criminals or intruders. The White-Light in HYBRID can be activated on intrusion into a secure zone creating a bright, visible lighting deterrent to any intruders who will know they are being watched the moment the light turns on.

## APPLICATIONS



# VOYAGER 1

## ANPR/LPR PRODUCT RANGE

The new Voyager series is a compact, integrated number plate capture camera designed for high performance, long life and low maintenance. All Voyager products capture images of the number plate on a 24 hour basis - day and night.

Voyager overcomes all problems associated with number plate capture – speed, reflectivity, sunlight, car headlights and depth of field – regardless of ambient lighting conditions. Voyager is a fully integrated solution combining camera, lens, filter, housing, PSU and IR technology into a single pre-calibrated unit.

Voyager is available in 10m, 20m, 30 or 40m (33ft, 66ft, 99ft or 132ft) versions and is designed for quick and easy installation in an environmental housing. Other distance models are available on request. Voyager uses Raytec's high power SMT LED technology.

The camera comes with a 3 year warranty and industry leading long life and low running costs. It can be used directly with DVRs on a stand alone basis or used in conjunction with ANPR/LPR software systems. A PSU with control features is included.

### VOYAGER IN OPERATION



Headlights on



Headlights off



### POWERFUL

- Dedicated 24 Hour number plate capture camera
- Up to 40m (132ft) range
- Latest SMT LED technology

### FLEXIBLE

- Easy installation and set-up
- Operates in all lighting conditions - day and night

### RELIABLE

- Low maintenance
- 3 Year warranty
- Pre-calibrated and tested

### CONTROLLED

- Cable Managed Bracket
- LED power control

### 3 YEAR WARRANTY

All Raytec ANPR/LPR systems are provided with a 3 year warranty, unmatched anywhere in the ANPR/LPR hardware industry. Raytec Voyager systems provide guaranteed long life!



## 24-HOUR NUMBER PLATE CAPTURE

All Voyager systems are designed to capture images of the number plate 24 hours a day without any need for adjustment or re-calibration. This includes both bright sunlight and night-time operation.

## RAY-VISION™ FILTERING SYTEM

Designed specifically for Voyager ANPR systems, RAY-Vision™ employs cutting edge optics techniques to reduce the impact of bright sunlight and headlights to achieve high levels of ambient light rejection. RAY-Vision™ is optically matched to RAYMAX Infra-Red technology in-built into all Voyager systems

## SMT (Surface Mount Technology)

The future of lighting is surface mount LED technology. Compared to standard through hole LED's, surface mount LED's are a more robust solution increasing reliability and improving product life. They are also far more efficient at the dissipation of heat allowing the LED's to run at higher power and achieve significantly improved performance.

## TECHNICAL SPECIFICATIONS

### CAMERA HEAD

<i>CCD:</i>	1/3"
<i>Effective elements:</i>	752 (H) x 582 (V)
<i>Resolution:</i>	480 TVL
<i>Min Illumination:</i>	Supplied with IR for zero lux operation
<i>IR Wavelength:</i>	850nm
<i>Environmental:</i>	IP66
<i>Temp Range:</i>	-50 to +50°C (-58 to 122°F)
<i>Colour:</i>	White Housing with Black IR unit
<i>Power Consumption:</i>	
<i>Dimensions:</i>	430 x 250 x 150mm 17" x 10" x 6" approx
<i>Total Weight:</i>	3kg

### BRACKETRY

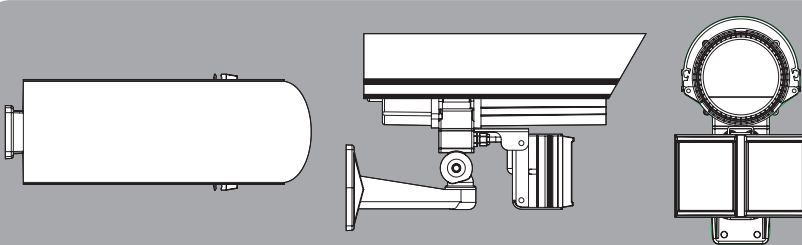
Cable managed wall mount bracket included. For pole or other bracket options please contact Raytec.

### POWER SUPPLY

<i>Input:</i>	Universal 100-240V AC auto-sensing
<i>Output:</i>	Dependant upon model
<i>Output – Camera and Housing:</i>	12V dc @ <1A
<i>Output – LED's :</i>	Pulsed & Synchronised 200-300mA at 15V
<i>Adjustable Power:</i>	10% - 100%
<i>Weight:</i>	1.85kg
<i>Dimensions: L x W x D</i>	160mm x 160mm x 81mm 6" x 6" x 4" approx
<i>Drilling Dimensions:</i>	4 x M4 holes @ 145 x 123mm

### PART CODES

RV1-10	Voyager 10m (33ft) ANPR/LPR Camera+PSU
RV1-20	Voyager 20m (66ft) ANPR/LPR Camera+PSU
RV1-30	Voyager 30m (99ft) ANPR/LPR Camera+PSU
RV1-30	Voyager 40m (132ft) ANPR/LPR Camera+PSU



# PRODUCT LIST



## RAYMAX SERIES - HI POWER INFRA-RED

### ULTIMATE ADAPTIVE ILLUMINATION PRODUCTS - TRIPLE PANEL

#### RAYMAX 300 - INCLUDES STANDARD PSU

RM300-AI-10	RAYMAX 300, 10-30 degree Adaptive Illumination, 850nm
RM300-AI-30	RAYMAX 300, 30-90 degree Adaptive Illumination, 850nm
RM300-AI-50	RAYMAX 300, 50-180 degree Adaptive Illumination, 850nm
RM300-AI-120	RAYMAX 300, 120-180+ degree Adaptive Illumination, 850nm

Covert Options Available. Add -C to codes above.

### ADAPTIVE ILLUMINATION PRODUCTS

#### RAYMAX 200 - INCLUDES STANDARD PSU

RM200-AI-10	RAYMAX 200, 10-20 degree Adaptive Illumination, 850nm
RM200-AI-30	RAYMAX 200, 30-60 degree Adaptive Illumination, 850nm
RM200-AI-50	RAYMAX 200, 50-100 degree Adaptive Illumination, 850nm
RM200-AI-120	RAYMAX 200, 120-180 degree Adaptive Illumination, 850nm

Covert Options Available. Add -C to codes above.

#### RAYMAX 100 - INCLUDES MULTI-FUNCTION PSU

RM100-AI-10	RAYMAX 100, 10-20 degree Adaptive Illumination, 850nm
RM100-AI-30	RAYMAX 100, 30-60 degree Adaptive Illumination, 850nm
RM100-AI-50	RAYMAX 100, 50-100 degree Adaptive Illumination, 850nm
RM100-AI-120	RAYMAX 100, 120-180 degree Adaptive Illumination, 850nm

Covert Options Available. Add -C to codes above.

#### RAYMAX 50 - INCLUDES MULTI-FUNCTION PSU

RM50-AI-10	RAYMAX 50, 10-20 degree Adaptive Illumination, 850nm
RM50-AI-30	RAYMAX 50, 30-60 degree Adaptive Illumination, 850nm
RM50-AI-50	RAYMAX 50, 50-100 degree Adaptive Illumination, 850nm
RM50-AI-120	RAYMAX 50, 120-180 degree Adaptive Illumination, 850nm

Covert Options Available. Add -C to codes above.  
Low Voltage Options Available - see below

#### RAYMAX 25 - INCLUDES STANDARD PSU - NON AI

RM25-10	RAYMAX 25, 10 degree, 850nm
RM25-30	RAYMAX 25, 30 degree, 850nm
RM25-50	RAYMAX 25, 50 degree, 850nm
RM25-120	RAYMAX 25, 120 degree, 850nm

Covert Options Available. Add -C to codes above.  
Low Voltage Options Available - see below

### RAYMAX ILLUMINATORS WITH LOW VOLTAGE PSU

#### RAYMAX 50 - INCLUDES STANDARD PSU - LOW VOLTAGE INPUT

RM50-AI-10-LVP	RAYMAX 50, 10-20 degree AI 850nm, 12-24V PSU input
RM50-AI-30-LVP	RAYMAX 50, 30-60 degree AI 850nm, 12-24V PSU input
RM50-AI-50-LVP	RAYMAX 50, 50-100 degree AI 850nm, 12-24V PSU input
RM50-AI-120-LVP	RAYMAX 50, 120-180 degree AI 850nm, 12-24V PSU input

Covert Options Available. Add -C to codes above.

#### RAYMAX 25 - INCLUDES STANDARD PSU - LOW VOLTAGE INPUT - NON AI

RM25-10-LVP	RAYMAX 25, 10 degree, 850nm, 12-24V PSU input
RM25-30-LVP	RAYMAX 25, 30 degree, 850nm, 12-24V PSU input
RM25-50-LVP	RAYMAX 25, 50 degree, 850nm, 12-24V PSU input
RM25-120-LVP	RAYMAX 25, 120 degree, 850nm, 12-24V PSU input

Covert Options Available. Add -C to codes above.

## RAYLUX SERIES - HI POWER WHITE-LIGHT

### ULTIMATE ADAPTIVE ILLUMINATION PRODUCTS - TRIPLE PANEL

<b>RAYLUX 300 -</b>	<b>INCLUDES STANDARD PSU</b>
RL300-AI-10	RAYLUX 300, 10-30 degree Adaptive Illumination, White-Light
RL300-AI-30	RAYLUX 300, 30-90 degree Adaptive Illumination, White-Light
RL300-AI-50	RAYLUX 300, 50-180 degree Adaptive Illumination, White-Light
RL300-AI-120	RAYLUX 300, 120-180+ degree Adaptive Illumination, White-Light

### ADAPTIVE ILLUMINATION PRODUCTS

<b>RAYLUX 200 -</b>	<b>INCLUDES STANDARD PSU</b>
RL200-AI-10	RAYLUX 200, 10-20 degree Adaptive Illumination, White-Light
RL200-AI-30	RAYLUX 200, 30-60 degree Adaptive Illumination, White-Light
RL200-AI-50	RAYLUX 200, 50-100 degree Adaptive Illumination, White-Light
RL200-AI-120	RAYLUX 200, 120-180 degree Adaptive Illumination, White-Light

<b>RAYLUX 100 -</b>	<b>INCLUDES STANDARD PSU</b>
RL100-AI-10	RAYLUX 100, 10-20 degree Adaptive Illuminatioin, White-Light
RL100-AI-30	RAYLUX 100, 30-60 degree Adaptive Illumination, White-Light
RL100-AI-50	RAYLUX 100, 50-100 degree Adaptive Illumination, White-Light
RL100-AI-120	RAYLUX 100, 120-180 degree Adaptive Illumination, White-Light

<b>RAYLUX 50 -</b>	<b>INCLUDES STANDARD PSU</b>
RL50-AI-10	RAYLUX 50, 10-20 degree Adaptive Illumination, White-Light
RL50-AI-30	RAYLUX 50, 30-60 degree Adaptive Illumination, White-Light
RL50-AI-50	RAYLUX 50, 50-100 degree Adaptive Illumination, White-Light
RL50-AI-120	RAYLUX 50, 120-180 degree Adaptive Illumination, White-Light

Low Voltage Options Available - see below

<b>RAYLUX 25 -</b>	<b>INCLUDES STANDARD PSU - NON AI</b>
RL25-10	RAYLUX 25, 10 degree, White-Light
RL25-30	RAYLUX 25, 30 degree, White-Light
RL25-50	RAYLUX 25, 50 degree, White-Light
RL25-120	RAYLUX 25, 120 degree, White Light

Low Voltage Options Available - see below

### RAYLUX ILLUMINATORS WITH LOW VOLTAGE PSU

<b>RAYLUX 50 -</b>	<b>INCLUDES STANDARD PSU - LOW VOLTAGE INPUT</b>
RL50-AI-10-LVP	RAYLUX 50, 10-20 degree A.I, White-Light, 12-24V PSU input
RL50-AI-30-LVP	RAYLUX 50, 30-60 degree A.I, White-Light, 12-24V PSU input
RL50-AI-50-LVP	RAYLUX 50, 50-100 degree A.I, White-Light, 12-24V PSU input
RL50-AI-120-LVP	RAYLUX 50, 120-180 degree A.I, White-Light, 12-24V PSU input

<b>RAYLUX 25 -</b>	<b>INCLUDES STANDARD PSU - LOW VOLTAGE INPUT- NON AI</b>
RL25-10-LVP	RAYLUX 25, 10 degree, White-Light, 12-24V PSU input
RL25-30-LVP	RAYLUX 25, 30 degree, White-Light, 12-24V PSU input
RL25-50-LVP	RAYLUX 25, 50 degree, White-Light, 12-24V PSU input
RL25-120-LVP	RAYLUX 25, 120 degree, White Light, 12-24V PSU input

## HYBRID SERIES - IR + WHITE-LIGHT

### HYBRID 300 - INCLUDES STANDARD PSU

HY300-30 HYBRID 300, 2 x 30 degree IR, 850nm, 30 degree White-Light, AI  
 HY300-50 HYBRID 300, 2 x 50 degree IR, 850nm, 50 degree White-Light, AI  
 Mixed angles and other angles (10° and 120°) available.

### HYBRID 200 - INCLUDES STANDARD PSU

HY200-30 HYBRID 200, 30 degree IR, 850nm, 30 degree White-Light, AI  
 HY200-50 HYBRID 200, 50 degree IR, 850nm, 50 degree White-Light, AI  
 Mixed angles and other angles (10° and 120°) available.

### HYBRID 100 - INCLUDES STANDARD PSU

HY100-30 HYBRID 100, 30 degree IR, 850nm, 30 degree White-Light, AI  
 HY100-50 HYBRID 100, 50 degree IR, 850nm, 50 degree White-Light, AI  
 Mixed angles and other angles (10° and 120°) available.

## RAYMAX / RAYLUX ACCESSORIES

### SPECIAL FEATURE POWER SUPPLIES

**STANDARD PSU** Standard PSU for all RAYMAX and RAYLUX products include:  
 current controlled power output, power adjustment pot,  
 photocell for automatic day/night switching, photocell adj pot  
 telemetry input for remote switching

~ PR  
**PREMIUM PSU** Includes all of the features of the standard PSU, PLUS:  
 Photocell following contact for switching of dual mode cameras  
 and 12V dc output for powering cameras etc.

~ PU  
**PULSED PSU** Specifically designed for pulsing Raytec lamps and synchronising  
 with cameras. Pulsed PSUs include: Power Adjustment, Video In  
 and Video Out connections to sync lamp and camera, 12V dc output  
 for powering cameras etc.

**MULTIPLE PSU** Available on request

#### NOTES ON RAYMAX / RAYLUX SPECIALIST PSU'S

1: To order add the part code as a suffix to the original part code and add the price to the price of the original product

## BRACKETRY - FOR RAYMAX AND RAYLUX

SB1 Single bracket for Top Pan/Tilt mount  
 DB2 Twin bracket for Top Pan/Tilt mount  
 WB1 Wall Bracket - L Bracket  
 PB-360 Pole Bracket - 360 degree to mount up to 8 units  
 PB-180 Pole Bracket - 180 degree to mount up to 4 units  
 PB2 2 way pole bracket - clamp  
 PB3 3 way pole bracket - clamp  
 PB4 4 way pole bracket - clamp

## VOYAGER - NUMBER PLATE CAPTURE CAMERAS

All Voyagers include PSU and bracketry

### VOYAGER 1 - SINGLE B&W ANPR/LPR CAMERA

RV1-10 Voyager 1- ANPR/LPR Camera-10m-Fixed Lens-B&W  
 RV1-20 Voyager 1- ANPR/LPR Camera-20m-Fixed Lens-B&W  
 RV1-30 Voyager 1- ANPR/LPR Camera-30m-Fixed Lens-B&W  
 RV1-40 Voyager 1- ANPR/LPR Camera-40m-Fixed Lens-B&W  
 RV1-1020 Voyager 1- ANPR/LPR Camera-10:20m-Varifocal Lens-B&W  
 RV1-2035 Voyager 1- ANPR/LPR Camera-20:30m-Varifocal Lens-B&W

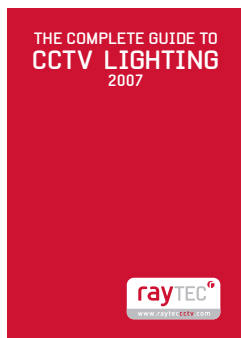
### VOYAGER 2 - SINGLE DUAL MODE ANPR/LPR CAMERA

RV2-1020 Voyager 2- ANPR/LPR Camera-10:20m-Varifocal Lens-Dual Mode  
 RV2-2035 Voyager 2- ANPR/LPR Camera-20:30m-Varifocal Lens-Dual Mode

### VOYAGER 3 - B&W ANPR/LPR CAMERA WITH COLOUR OVERVIEW

RV3-1020 Voyager 3- ANPR/LPR Camera-10:20m-Varifocal Lens-B&W plus  
 colour overview camera  
 RV3-2035 Voyager 3- ANPR/LPR Camera-20:35m-Varifocal Lens-B&W plus  
 colour overview camera

# REQUEST FURTHER INFORMATION



In addition to the Product Guide Raytec also publish "The Complete Guide to CCTV Lighting", a reference point for all matters concerning lighting and CCTV. The Guide is available free to all installers, specifiers, end users and consultants.

The Guide looks at the key challenges of CCTV Lighting and how to address and overcome them. To receive your copy of the Guide please complete and return the form below.

## THE COMPLETE GUIDE TO CCTV LIGHTING

☐ Request Information

Company: \_\_\_\_\_

Contact: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

Town: \_\_\_\_\_

County: \_\_\_\_\_

Postcode: \_\_\_\_\_

Country: \_\_\_\_\_

Tel: \_\_\_\_\_

E-mail: \_\_\_\_\_

## RAYTEC ILLUMINATORS IN ACTION DVD

☐ Request Information

## REQUEST A FREE LIGHTING SURVEY

☐ Request Information

**FAXBACK UK: +44 (0) 1670 528 447**  
**or USA: +1 281-835-5777**

Raytec are committed to providing the highest levels of customer service and technical support. For further information on lighting, any Raytec product or to discuss a particular project, please contact Raytec on:

Tel UK: +44 (0) 1670 528446

or USA: +1 281-438-3599

e-mail UK: [sales@rayteccctv.com](mailto:sales@rayteccctv.com)

e-mail USA: [ussales@rayteccctv.com](mailto:ussales@rayteccctv.com)

# Illumination for any CCTV application



**INFRA-RED  
LED**



**WHITE-LIGHT  
LED**



**HYBRID IR &  
WHITE-LIGHT**



**NUMBER PLATE  
CAPTURE**

**rayTEC<sup>®</sup>**

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