

Installation Guide

This installation guide provides instructions for installing the PULSESTAR illuminators & Controller

Installation Steps

1. Mount Illuminator(s) adjacent to camera
2. Mount PSU/ Controller Unit
3. Connect Illuminator(s) to Controller
4. Connect input trigger to controller
- ⚠ (UNIT WILL NOT FUNCTION WITHOUT APPROPRIATE INPUT TRIGGER)**
5. Connect Controller to power
6. Optional network connectivity for trouble shoot or use by experienced and expert users

Set Up Steps

1. Align illuminator towards scene
2. Adjust vertical angle
- 3a. Adjust horizontal angle via Adaptive Illumination (AI) (if required)
- 3b. Change angle of diffuser if required
4. Tighten all fixings

⚠ Eye Safety

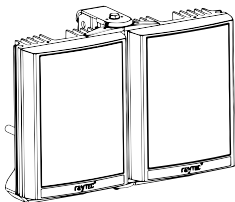
EN62471 Risk Group 2: Do NOT stare at the lamps. Use appropriate protection. Hazardous distance is 1,840mm. Max. Exposure Hazardous Value : 68% of Risk Group 2 Limit at 200mm from the lamp.

Golden Rules:

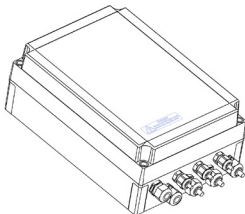
1. Ensure Controller orientation has the cable glands at the bottom underneath the enclosure
2. Do not input Mains Voltage into Low Voltage versions
3. Enclosure is fully water tight
4. Ensure there is a trigger input to the controller

Package Contents

PULSESTAR illuminator



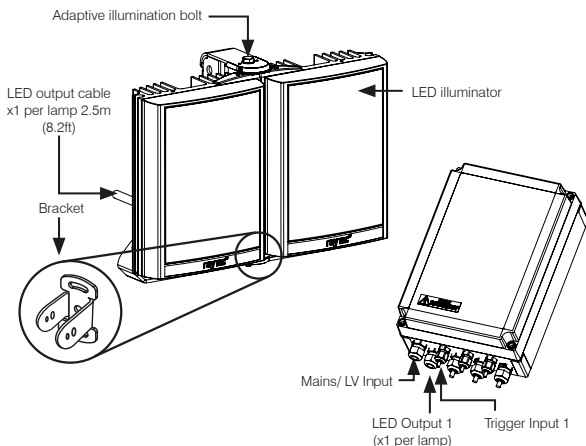
PSU/ Controller



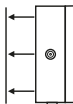
Spare Lamp Diffuse

This basic installation guide is for users who don't want to adjust the performance of the product. Experienced and expert users may request the Engineering Guide which provides information on changing the set up and operation of the unit.

PULSESTAR illuminators deliver powerful pulsed lighting for transport and machine vision applications including ANPR/ LPR applications. With high intensity lighting drive power, Platinum Elite twin- core SMT LEDs and illumination designed to be pulsed in synchronisation with the camera shutter, they deliver high intensity lighting on- demand to illuminate fast moving objects. All models feature an interchangeable lens system with Hot-Spot Reduction Technology for perfect even illumination. Pulsestar illuminators are long life and low maintenance.



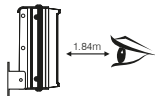
Isolate mains before removing cover



Mount PSU to flat surface



Install in a well ventilated area



Do not continually stare at lamp

Specifications subject to change without notice. Installation to be carried out by suitable trained and qualified personnel.

Inter-Changeable Lens System

PULSESTAR is factory set and delivered with a 35° x 10° Beam Angle interchangeable lenses (ILS) are also supplied.

To alter to 10° x 10°, simply remove interchangeable lens (ILS).

To alter to 20° x 10°, replace with other ILS lens supplied.

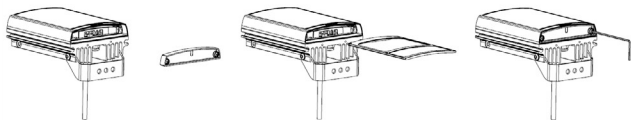
Other angle ILS lenses are available to order, please contact Raytec.

All ILS lenses will be clearly marked with the angle which they will produce when inserted into PULSESTAR.

Please handle ILS lenses with care - and do not touch the optical film.

Only 1 ILS lens can be inserted into the product at anytime. The product cannot accommodate multiple ILS lenses at the same time.

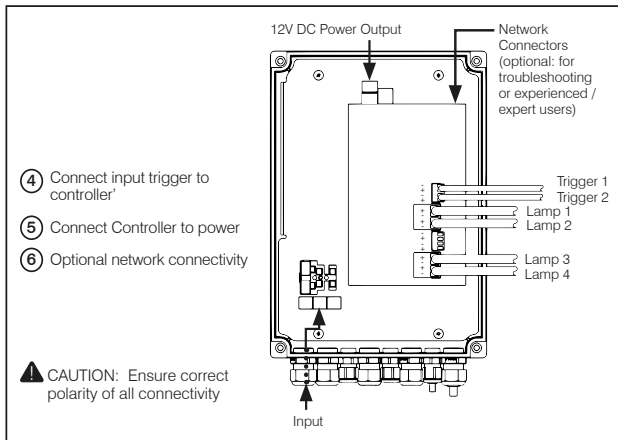
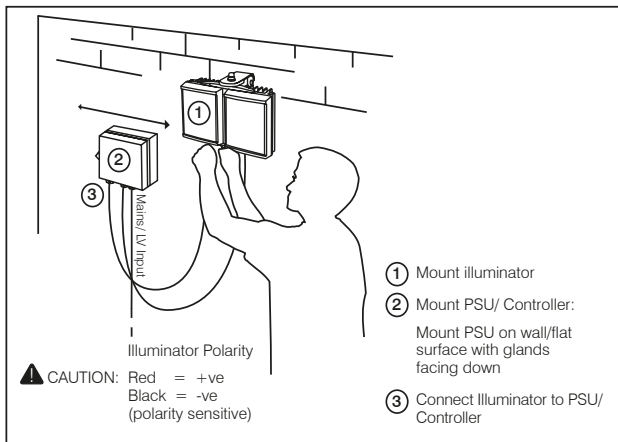
We would recommend that power is turned off when replacing ILS lenses.



Remove the base plate using a 2.5mm allen/hex key. Insert the required ILS lens and re-attach the base plate securely ensuring the gasket is correctly located. (Screw Torque 0.6Nm)

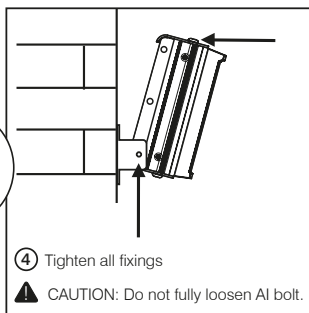
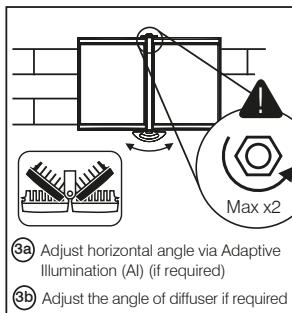
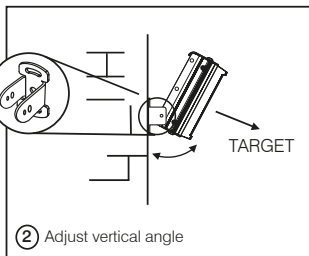
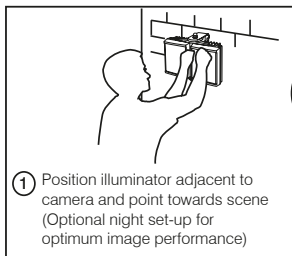
IMPORTANT NOTE: Ensure base plate is securely located, the gasket is correctly located and the screws correctly fastened to ensure and maintain IP66 rating of the product.

Installation

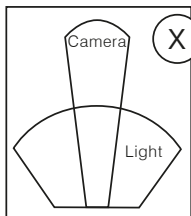


(see diagrams on page 8 for further detail)

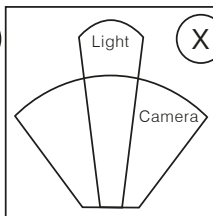
Set Up



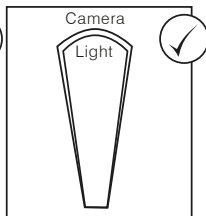
Match illumination to camera field of view



Reduces performance



May cause hot spots



Best performance

For ANPR applications we recommend locating the illuminator as closely as possible to the camera for retroreflective plates, to ensure maximum amount of light is used. The angle of camera/light should also be less than 35° in all axes

Specifications

Model	PSTR i24	PSTR i32	PSTR i48	PSTR i72	PSTR i96	PSTR w24	PSTR w32	PSTR w48	PSTR w72	PSTR w96
Lighting Drive Power	260W	340W	500W	740W	980W	110W	150W	220W	330W	440W
Consumption	13W	17W	25W	37W	49W	11W	15W	22W	33W	44W
Number of LEDs	24	32	48	72	96	24	32	48	72	96
Typical Pulse Width	1ms, up to 50hz max (other options available)					2ms, up to 50hz max (other options available)				
Wavelength/ Colour	850nm (940nm & 730nm available)					~6500k (other colours available)				
Input Versions	Universal 100-230V AC or 24V DC option									
LED type	Platinum Elite twin-core SMT LEDs									
Illumination Angle	Standard pack contains 35x10 (pre-fitted), 10x10 (no lens fitted), 20x10 lenses									
Beam Shape	Elliptical with HRT (Hot-Spot Reduction Technology)									
Beam Angle System	VARIO Interchangeable Lens System									
Output Channels	Constant current outputs with overdrive protection									
Trigger Input	Opto-isolated digital inputs. Require 3v to 24v DC operation rising edge +ve = pulse on									
Timing repeatability	100µS – minimum subject to other operating parameters									
12V DC Power Output	1A									
Control/ Communication	Ethernet – optional connection for troubleshooting or experienced / expert users									
IP Rating	IP66									
Temperature Rating	-20 to +45C (-4° to 113°F)									
Colour	Black illuminator, light grey PSU / controller					Silver illuminator, light grey PSU / controller				
Weight (illuminator)	1.65kg (3.6lbs)	2.25kg (5lbs)	4.5kg (9.9lb)	6kg (13.2lbs)	2 x 4.5kg (9.9 lbs)	1.65kg (3.6lbs)	2.25kg (5lbs)	4.5kg (9.9lb)	6kg (13.2lbs)	2 x 4.5kg (9.9 lbs)
Weight (power supply)	1.7kg (3.75lb)	1.7kg (3.75lb)	2.0kg (4.4lb)	2.3kg (5.1lb)	2.3kg (5.1lb)	1.7kg (3.75lb)	1.7kg (3.75lb)	2.0kg (4.4lb)	2.3kg (5.1lb)	2.3kg (5.1lb)

Model	PSTR i24	PSTR i32	PSTR i48	PSTR i72	PSTR i96	PSTR w24	PSTR w32	PSTR w48	PSTR w72	PSTR w96
Dimensions (illuminator)	135 x 180 x 68.2mm (5" x 7" x 2.6" approx.)	209 x 178 x 67mm (8" x 7" x 3" approx.)	279 x 223 x 68mm (11" x 9" x 3" approx.)	423 x 226 x 68mm (17" x 9" x 3" approx.)	2 off 279 x 223 x 68mm (11" x 9" x 3" approx.)	135 x 180 x 68.2mm (5" x 7" x 2.6" approx.)	209 x 178 x 67mm (8" x 7" x 3" approx.)	279 x 223 x 68mm (11" x 9" x 3" approx.)	423 x 226 x 68mm (17" x 9" x 3" approx.)	2 off 279 x 223 x 68mm (11" x 9" x 3" approx.)
Dimensions (power supply)	181 x 287 x 107mm (8" x 12" x 4" approx.)									
Bracketry	U Bracket	Adaptive Illumination Bracket				U Bracket	Adaptive Illumination Bracket			
Country of Manufacture	United Kingdom									
Standard Setup	The PULSESTAR unit is configured in the following way: x24,x48,x72 units LED outputs 1, 2 and 3 (where applicable) are simultaneously triggered by a positive going input on "trig 1"									
	X96 units: LED outputs 1 and 2 are triggered simultaneously by a positive going input on "trig 1" LED outputs 3 and 4 are triggered simultaneously by a positive going input on "trig 2"									
	Trig 1 and Trig 2 can be commoned together so that all LED outputs can be triggered from a single input trigger.									
	For other configurations please contact Raytec.									
	1ms pulse width and 20ms retrigger delay suitable for a shutter speed of 1/1000s or shorter and a maximum frame rate of 50fps					2ms pulse width and 20ms retrigger delay suitable for a shutter speed of 1/500s or shorter and a maximum frame rate of 50fps				

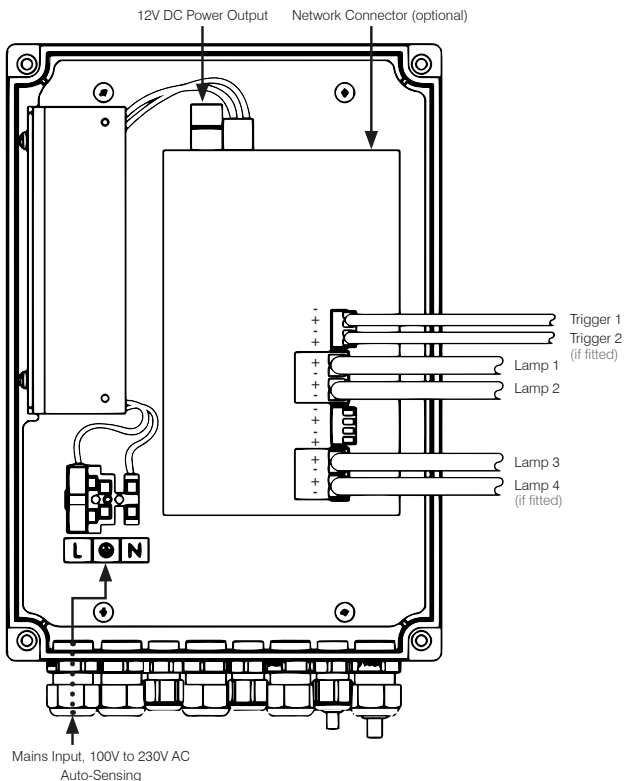


NOTE: Ensure operating voltage is correct for unit being installed.
DO NOT INPUT MAINS VOLTAGE INTO LOW VOLTAGE CONTROLLERS.

Controller Diagrams (Not to scale)

High Voltage - x72 and x96

4 Channel Controller: up to 4 lamps, 2 triggers



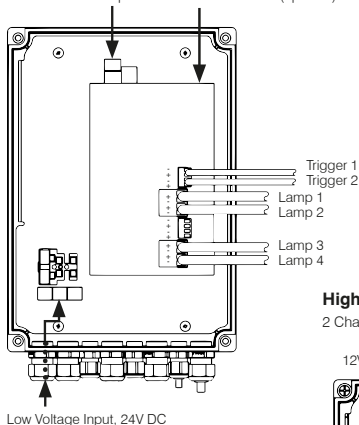
NOTE: Trigger Input - TTL - 3.3V to 24V DC. LED Output - Polarity Sensitive
Rising edge +ve = pulse

Controller Diagrams

Low Voltage - x72 and x96

4 Channel Controller: 4 lamps, 2 triggers

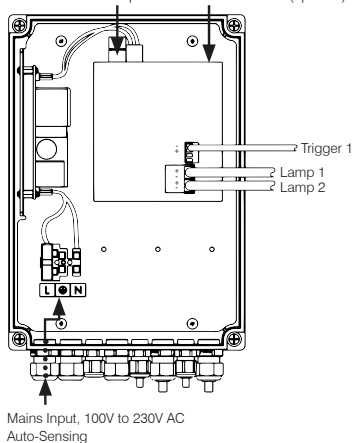
12V DC Power Output Network Connector (optional)



High Voltage - x24 and x32

2 Channel Controller: 2 lamps, 1 triggers

12V DC Power Output Network Connector (optional)



NOTE: Trigger Input - TTL - 3.3V to 24V DC. LED Output - Polarity Sensitive

Troubleshooting

Ensure all tests are undertaken by a qualified, trained engineer

Ensure safe working practices are followed at all times

PLEASE NOTE: If the external flexible cable or cord is damaged, it shall be exclusively replaced by manufacturer, service agent or similarly qualified person to avoid a hazard.

Step 1: Lamp and Controller

Check polarity of lamp connection : RED = +ve, BLACK = -ve

Check mains input

Check fuse intact

Check trigger polarity is correct, 3V-24V DC rising edge = pulse on

Check trigger

Step 2: Set-up camera, lens and illumination

Check alignment of lamp

Check camera / lens are set correctly

Check specification of lamp

Check diffuser angle

Step 3: Call Raytec for further assistance

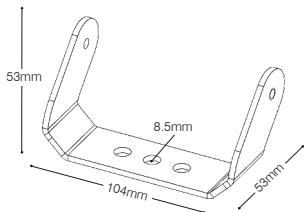
Note down:

- Model and serial number of illuminator
- Camera make and model
- Lens make and model

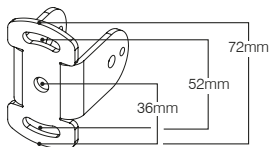
If the Raytec lamp is still not delivering the required performance, please contact us for further assistance.

Technical Drawings

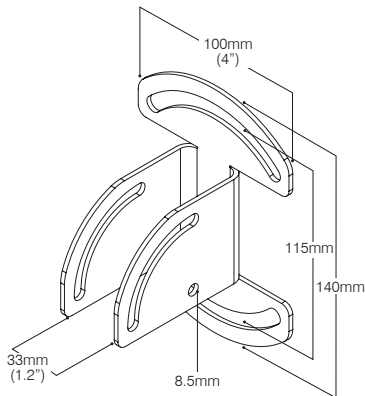
Standard Bracketry



PULSESTAR x24



PULSESTAR x32, 48, 96



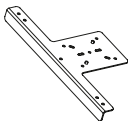
PULSESTAR x72

Optional Bracketry

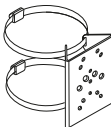
Wall Mount



Ptz Mount



Pole Mount



VUB Universal Bracket



Additional Information

This product must be installed by a person familiar with the construction and operation of the product and the hazards involved, in accordance with the applicable installation code.



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