



# PEARL

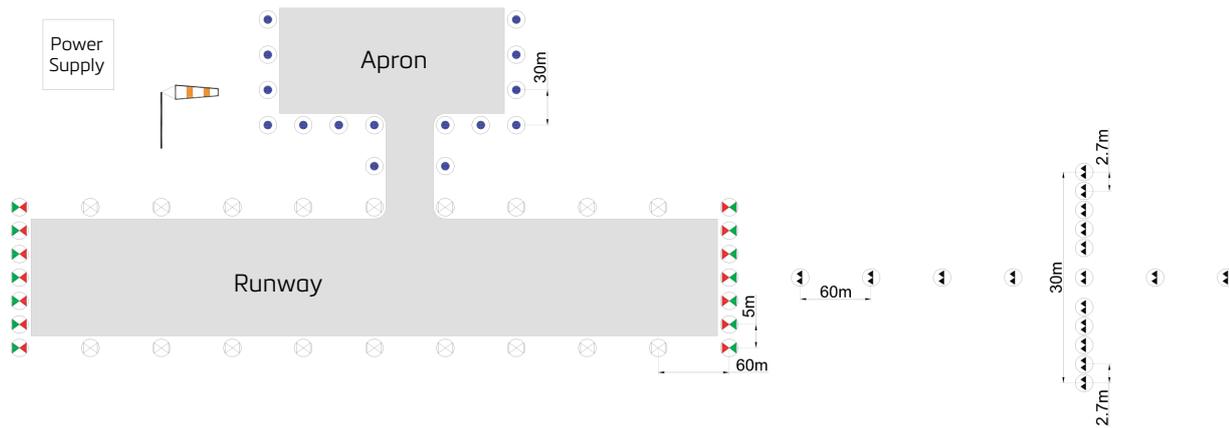
## Packaged Elevated Airfield Runway Lighting System

### Introduction

The PEARL (Packaged Elevated Airfield Runway Lighting) System is designed specifically to provide the benefits of LED lighting to visual approach aerodromes such as regional airports, airstrips and military support strips. The PEARL System is to be used by pilots in VMC (Visual Meteorological Conditions) for operations under VFR (Visual Flight Rules).

Able to provide the pilot with guidance during approach and landing, whilst considering the meteorological visibility, time of day and approach speeds up to 140 kts, the performance figures achieved by PEARL are equivalent or superior to those specified by CAP 168 in the UK or FAA in the USA.





## Features

- Easy to install:
  - Plug & play
  - Limited civil works with no specialised skills required
- Compact & lightweight body constructed from cast aluminium
- Optical cap made from scratch resistant polycarbonate
- 3 Step Light Dimming
- Two circuit DCR Regulator
- Pre-cut cables with FAA L-823 connectors
- Weatherproof
- Polyester powder golden yellow finish
- Optional:
  - FAA L-854 Radio Remote Control enabling pilot control without assistance from the ground
  - APAPI system
  - Windssock

## Benefits

- Low power consumption
- Almost zero maintenance
- Operational even when the Pilot is not properly aligned (non-instrument approach), up to 10° offset
- Extended operating hours for the airfield Designed for easy mounting
- Affordable – lease purchase option available (UK only)

## Components

The PEARL System consists of 4 distinct application packages, all of which can be purchased singularly or in any combination of options as befits the customer's requirements.

### Package A - Basic kit (900m runway)

- 28 Runway Edge fittings
- 12 Threshold/Runway End fittings
- Mounting systems Cables and connectors
- DCR power supply

### Package B - Runway Extension Kit

- 2 Runway Edge fittings
- Mounting systems Cables and connectors

### Package C - Simple Approach

- 17 Approach fittings Mounting systems
- Cables and connectors
- DCR power supply

### Package D - Taxiway/Apron

- 6 Taxiway/Apron fittings
- Mounting systems
- Cables and connectors



Runway Edge



Threshold/Runway End



Approach



Taxiway/Apron

## Ordering Illustration

1000m Runway + Simple Approach + 2 Taxiways would be ordered as follows:  
**1 x A + 1 x B + 1 x C + 2 x D**

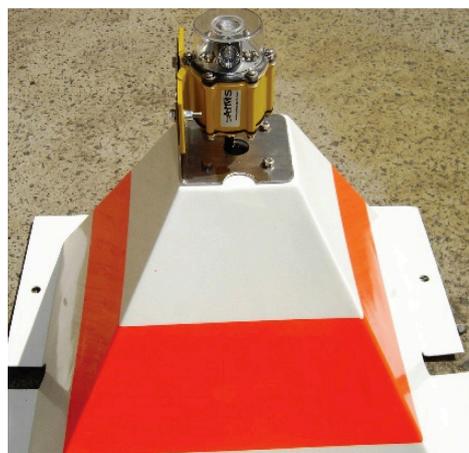
If you have any questions with regard to ordering the above packages, please contact: [products@atgairports.com](mailto:products@atgairports.com)

The PEARL System is designed to provide the benefits of an LED lighting system to small aerodromes and airstrips. Aside from the light fittings, the PEARL System is also available with additional equipment which will help to further expand the operational capabilities of the airfield including:

- Radio Control
- Wind Cone
- APAPI

## Mounting Options

The lights are designed for easy mounting on tube (30 to 70mm dia) or fibre glass red/white pyramid used as day marking. The PEARL System can be easily installed onto either system, however atg airports can also provide technical advice or installation services if required.



## Characteristics of light intensity

### Daytime: Visual Cues:

- RWY marks, mounting Pyramids
- PEARL System at 100% intensity

### Twilight:

- PEARL System dimmed at 30% intensity

### Night:

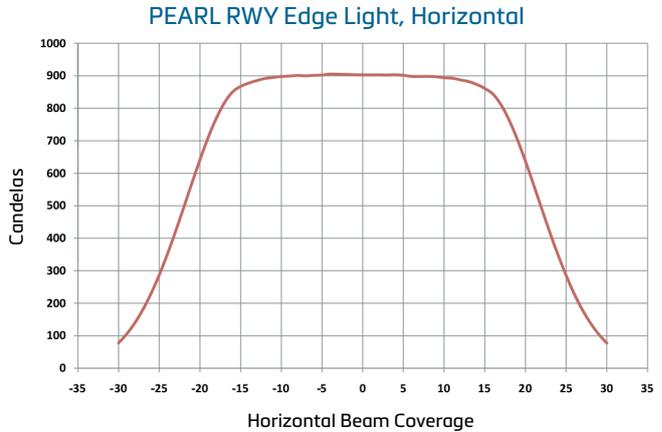
- PEARL System dimmed at 10%

### Visibility:

- 3000m (VFR) even 1500m (S-VFR)

### Visual Range:

- Minimum of 1 minute flight time before TD for A/C with landing speed up to 140kts



## Characteristics of beam shape

- Suitable for use even when the Pilot is not properly aligned (non-instrument approach) up to 10° offset
- Also visible during standard circuit (Circling Guidance component available on the runway edge fitting)
- Should not be too focussed to avoid gross differences between lights in a pattern, horizontally and vertically
- Absorbs installation alignment errors

## Specifications

Main Beam : -5/+5°H, 1/5°V (rectangle)

Secondary Beam : -15/+15°H, 0/8°V (ellipse)

Application	Colour	Peak	Main Beam			Secondary Beam		
			Horizontal	Vertical	Average	Horizontal	Vertical	Average
Approach	White	700Cd	-5°/+5°	1°/5°	600Cd	-10°/+10°	0°/8°	
Threshold WB	Green	700Cd	-5°/+5°	1°/5°	700Cd	-10°/+10°	0°/8°	600Cd
Threshold	Green	400Cd	-5°/+5°	1°/5°	300Cd	-10°/+10°	0°/8°	250Cd
Runway Edge	White	800Cd	-5°/+5°	1°/5°	700Cd	-10°/+10°	0°/8°	600Cd
Runway End	Red	350Cd	-5°/+5°	1°/5°	300	-10°/+10°	0°/8°	250Cd
Runway End Uni	Red	650Cd	-5°/+5°	1°/5°	550	-10°/+10°	0°/8°	450Cd
Taxiway Edge	Blue	40Cd	360°	360°	20Cd	360°	49/90°	5Cd

# PEARL Packaged Elevated Airfield Runway Lighting System

## Characteristics of beam shape

- The system is powered by a DCR (Direct Current Regulator) delivering 1.4 Amp DC:
- Available in single or double independent outputs of 500 W for interleaved supply of the series circuit
- Max output voltage 400 V
- Input power 220 VAC 50/60 Hz  $\pm 10\%$
- Main characteristics in accordance with FAA L-828
- Brightness control in 3 steps
- Open circuit protection and over current protection
- CE, LVD, EMC compatible
- Efficiency at full load higher than 90%
- Local/remote selection switch

The lights are connected in series with low voltage cables, cut at length and equipped with factory moulded FAA L-823 quick connectors.



## Suggested specifications

- Compact & lightweight body constructed from cast aluminium
  - Total weight of the fitting including the cable less than 500g
  - Golden yellow finish
  - Optical cap made from scratch resistant polycarbonate
  - LED light engines shall be provided for the various applications
  - Two core cable 50 cm long with a FAA L-823 plug class A, Type II, Style I
  - 3 Step Light Dimming
  - Pre-cut cables should be equipped with FAA L-823 factory moulded connectors
  - Remote control shall be activated through FAA L-854 Radio Controller
- Power supply through DCR Constant Current Regulator:
- Capability for two independent outputs of 500W for interleaved supply of the series circuit
  - The voltage on the series circuit shall be kept below 400 Volts
  - Input power 220VAC 50/60Hz  $\pm 10\%$
  - Open circuit protection
  - Over current protection
  - CE, LVD, EMC compatible
  - Efficiency at full load higher than 90%



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