



# Kingfisher High Mast

Part of the **LUCENT** group of companies

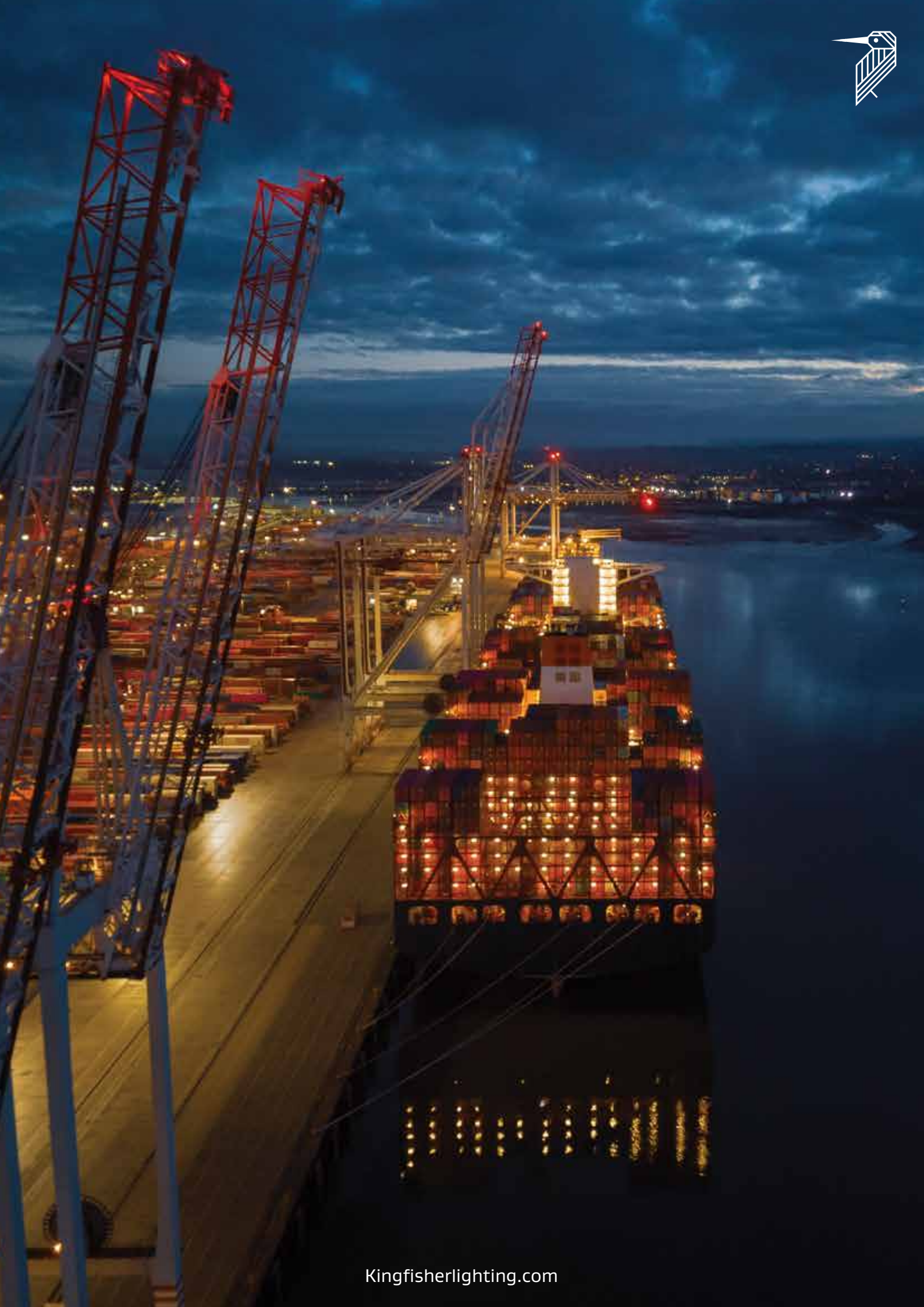


## High Mast Lighting Solutions

PORTS & MARITIME | AVIATION | HIGHWAYS

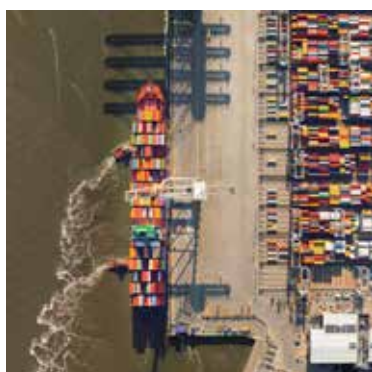
[Kingfisherlighting.com](http://Kingfisherlighting.com)





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## ABOUT US

Kingfisher Lighting is a leading provider of products and services in exterior lighting with over 35 years of experience in the development and delivery of a range of cost effective, technically excellent lighting solutions for many high-profile customers.

Working across a range of customers including wholesalers, contractors, specifiers, designers, local authorities, and end-users, we design and supply products and schemes in applications such as road and street lighting, urban landscapes, transport, car parks, distribution and warehousing, high mast and sports lighting.



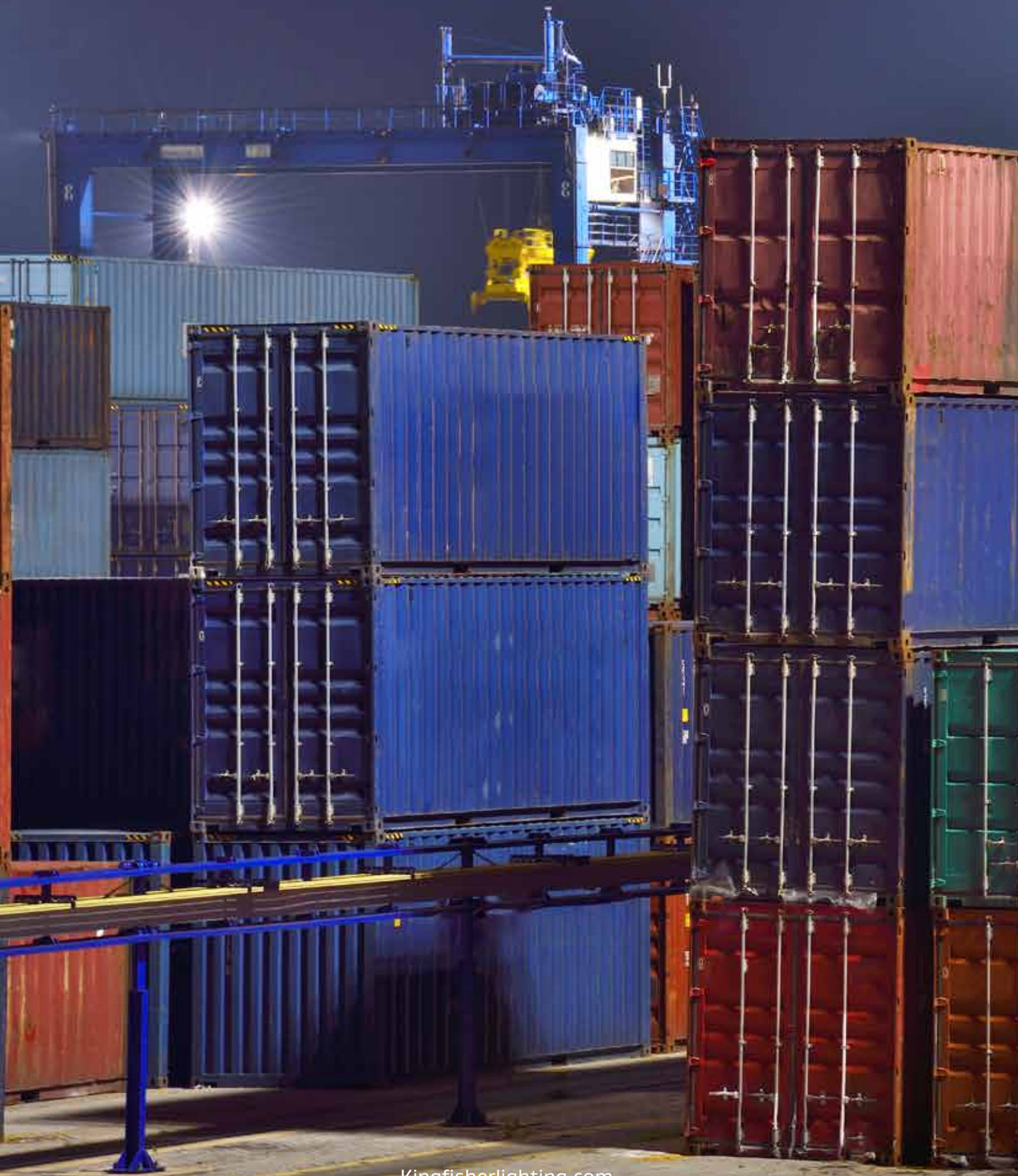
# WORLD CLASS SERVICES

Dedicated to delivering advanced solutions to our clients, Kingfisher offer fully bespoke services with a focus on quality, efficiency, sustainability and longevity.

Our best-in-class offerings are tailored to the growing needs of your business and sites, ensuring a futureproofed service that works for you.

- Industry leading product quality
- State-of-the-art lighting designs
- Reduced energy consumption
- Exceeding industry standards & guidance
- Detailed ROI reports
- Proven sustainable solutions
- Reduction of environmental impact
- A focus on health & safety
- Full installation
- Tailored maintenance packages



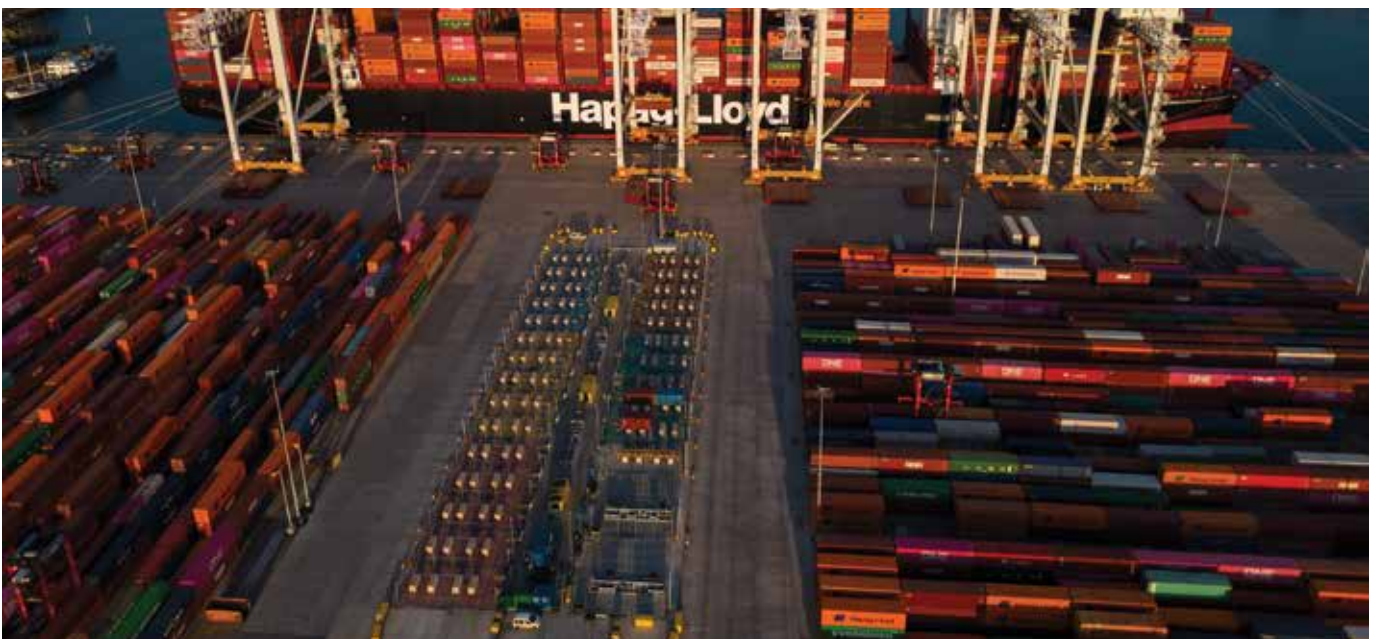




# PORT & MARITIME

Working closely with our clients, we offer a range of lighting products and accessories specially designed for use in maritime settings. From marine grade finishes as standard, to specialist high quality masts systems, as well as bespoke services to perfectly compliment each site.

From concept to commissioning, Kingfisher will guide you through every step of the process, including creating the perfect maintenance package to ensure your scheme stands the test of time.







# AVIATION

With a wealth of expertise and experience, Kingfisher works closely with our clients to create the perfect airside lighting schemes that exceeds all regulations and guidance. Our commitment to excellence means we have a focus on energy efficiency and sustainability to ensure you meet your key strategy goals.

With dedicated and highly experienced installation teams, we have the capability to manage all on-site works from detailed project planning to welfare considerations, as well as safe airside working practices.







# HIGHWAYS

Our teams will guide you through all aspects of highway lighting, including assessing the ideal locations for each mast by creating safe and convenient spaces for future works. The expert project team will establish the perfect lighting levels and uniformity for conflict areas.

With vast experience and industry recognised accreditation such as HERS, we manage each project from start to finish eliminating any concerns around working on busy highway sites.







# PRODUCTS

With a state-of-the-art, in-house research and development team, and manufacturing facility, our lighting is world class. Using only tier one components which exceed expectations, our customers can have peace of mind by investing in quality products that will not only do the job but are guaranteed to stand the test of time.

Our range of flood lighting has been specifically developed to offer the highest quality of light with low glare distribution, 0% ULOR and perfect colour rendering. These high quality fixtures are compatible with a range of accessories to perfectly compliment your scheme, ensuring all avenues are catered for.



# AMNIS Flood

Designed and Engineered in the UK, AMNIS Flood offers the best possible performance and efficiency as standard. Using bespoke reflector and heatsink technology, this luminaire is ideal for large area lighting such as sports facilities and high mast applications.

## Key Features

- 900.0W - 1300.0W
- 95,927 - 188,662 Luminaire Lumens
- Efficacy up to 150 lm/W
- ULOR 0%
- 2700K, 4000K & 5000K
- CRI >70 & >80
- Lifetime >100,000hr L85 B10 at 25°C
- Flat-to-ground with 5° Built in Hood
- Reflector System
- Flicker Index 0.12% / HDTV Ready



## Specification Text

The luminaire shall be manufactured from **high pressure die-cast aluminium** with **high transmission glass** and shall be fabricated to support **improved circular economy**.

Using **reflector technology** and a **bespoke optical system**, the luminaire shall be capable of producing **low glare, flicker-free** precision illumination.

It shall have an LED efficacy of **150 luminaire lm/W** and will be capable of producing up to **188,662 luminaire lumens** at 4000K with a CRI>70. It shall have an asymmetric forward throw optic and rated at **IP66 and IK08**.

### Weight:

|                               |         |
|-------------------------------|---------|
| Fitting:                      | 28.2 kg |
| Driver:                       | 6.2 kg  |
| Fitting with integral driver: | 34.4 kg |

|               |  |
|---------------|--|
| Windage:      | 0.10m²   |
| Material:     | Die-cast Aluminium                               |
| Paint Finish: | Marine Grade<br>Powder Coated<br>Anthracite Grey |

Embodied Carbon: 414 - 743 kg CO²e



## Inrush Data

| Wattage (W) | Inrush Current (A) | Inrush Duration (µS) |
|-------------|--------------------|----------------------|
| 450         | 150                | 450                  |
| 665         | 225                | 450                  |
| 900         | 300                | 450                  |
| 1350        | 450                | 450                  |

## Windage by Elevation

| Tilt (°) | Windage (m²) |
|----------|--------------|
| 0        | 0.16         |
| 5        | 0.16         |
| 10       | 0.16         |
| 15       | 0.16         |
| 20       | 0.21         |
| 25       | 0.26         |
| 30       | 0.31         |

# AMNIS Match

Experience power and performance with the AMNIS Match flood light. This flat-to-ground fitting is the perfect solution for sports and recreational grounds, with its powerful performance, low glare output and compact design.



## Key Features

- 450.0W - 665.0W
- 47,439 - 95,667 Luminaire Lumens
- Efficacy up to 145 lm/W
- ULOR 0%
- 2700K, 4000K & 5000K
- CRI >70 & >80
- Lifetime >100,000hr L85 B10 at 25°C
- Flat-to-ground with 5° Built in Hood
- Reflector System
- Flicker Index 0.12% / HDTV Ready



## Specification Text

The luminaire shall be manufactured from **high pressure die-cast aluminium** with **high transmission glass** and shall be fabricated to support **improved circular economy**.

Using **reflector technology** and a **bespoke optical system**, the luminaire shall be capable of producing **low glare, flicker-free** precision illumination.

It shall have an LED efficacy of up to **145.0 luminaire lm/W** and will be capable of producing up to **95,667 luminaire lumens** at 4000K with a CRI>70. It shall have an asymmetric forward throw optic and rated at **IP66 and IK08**.

### Weight:

|                               |         |
|-------------------------------|---------|
| Fitting:                      | 15.9 kg |
| Driver:                       | 5.5 kg  |
| Fitting with integral driver: | 21.0 kg |

|                  |  |
|------------------|--|
| Windage:         | 0.10m <sup>2</sup>                               |
| Material:        | Die-cast Aluminium                               |
| Paint Finish:    | Marine Grade<br>Powder Coated<br>Anthracite Grey |
| Embodied Carbon: | 425 - 541 kg CO <sub>2</sub> e                   |



### Inrush Data

| Wattage (W) | Inrush Current (A) | Inrush Duration (μS) |
|-------------|--------------------|----------------------|
| 450         | 150                | 450                  |
| 665         | 225                | 450                  |
| 900         | 300                | 450                  |
| 1350        | 450                | 450                  |

### Windage by Elevation

| Tilt (°) | Windage (m <sup>2</sup> ) |
|----------|---------------------------|
| 0        | 0.10                      |
| 5        | 0.10                      |
| 10       | 0.10                      |
| 15       | 0.10                      |
| 20       | 0.11                      |
| 25       | 0.13                      |
| 30       | 0.16                      |



# ZACTIS

ZACTIS is a high-performance flat-to-ground LED flood light perfect for sports, high mast and area applications. As well as facilitating easy installation and maintenance, the sleek, low-profile design, reduces the load together with decreasing windage.



## Key Features

- 125.0 - 320.0W
- 16,447 - 44,156 Luminaire Lumens
- Efficacy up to 138 lm/W
- 640mA - 805mA
- 2700K & 4000K
- CRI >70
- Lifetime >100,000hr L80



## Specification Text

The luminaire shall be manufactured from **high-pressure die-cast aluminium**.

It shall have an **LED efficacy of up to 138 lm/W** and will be capable of producing up to **44,156 luminaire lumens** at 4000K with a CRI >70.

It shall have an **asymmetric forward throw optic** and is **rated at IP65 and IK08**.

|               |  |
|---------------|--|
| Weight:       | 15.0kg - 16.5kg                                  |
| Windage:      | 0.04m <sup>2</sup>                               |
| Material:     | Die-cast Aluminium                               |
| Paint Finish: | Marine Grade<br>Powder Coated<br>Anthracite Grey |

# ACCESSORIES

Designed to cover every aspect of your project, we offer a range of add-ons including fuse cut-outs, custom paint options and more. Our expert team will be able to guide you through the options.

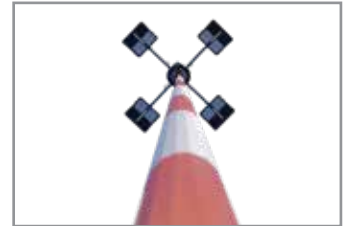
## Obstruction / Warning Lights

Mark high structures or enhance visibility with this bright, long-life LED obstruction and warning lighting. This low maintenance solution is available in either a single or double lamp.



## Custom Paint

Colour match your masts to your lighting heads, company colours or to meet industry standards with our made to order options. We offer a range of finishes to ensure the end product is exactly



## Spill Shields

If extreme cut off of light is needed, we offer a range of spill options to ensure your lighting meets standards and regulations. This includes both internal and external shields.



## Feeder Pillars

Providing a safe enclosure for remote control gear and the termination of supply cables, we have a wide collection of feeder pillars in a variety of sizes. We can even provide pre-wired feeder pillars to ensure easier on-site installation.



## Fuse Cutout

Fully complying to BS 7654, our Fuse Cut Outs allow for the safe termination of incoming and outgoing PVC and SWA cables. Manufactured from high spec thermoplastic, they're suitable for the fusing of single-phase supply to your luminaires. Fuses range from 6A to 20A. Miniature Circuit Breaker (MCBs).



## Bespoke Items

Do you need a different type of accessory? Our team will help source the right items to compliment your site.

# INTELLIGENT LIGHTING CONTROLS

Our smart control system offers a wireless solution that has been designed to not only save you time on programming but to save energy consumption, and of course money.

Using this simple, yet powerful system will allow full control over your lighting scheme. We design a bespoke system to fit the needs of your site and its functions, making sure you get the most out of the lighting and take advantage of maximised savings.



## Flexible Solutions

- Wireless or wired control capabilities
- PIRs & motion detection
- Simple Dim to Warm
- Bespoke system design
- Simplified installation
- Easy scene setting
- DMX light shows
- Energy savings as standard
- User friendly interfaces
- Intelligent functionality
- Remote access
- Futureproof

## Tailored Functionality

Our expert team will assess the current and future needs of your site and create a tailored system to perfectly service your lighting scheme. This may be a simple on/off system or dimming profile, all the way up to a fully programmed DMX light show to wow spectators.

- Dims lighting using DALI or 1-10V protocols
- Simple on/off functionality via relay, PIR or daylight sensor
- Programmable scene setting
- Controlled via web-based interface, simple push button panel or even via key fob
- Pre-set DMX scenes
- Complex DMX light shows







## CHOOSING YOUR CONTROLS PACKAGE

### Stand Alone Controls

These control options offer a single and simple set-up functions such as:

- Part Night Dimming
- Motion or Presence Detection
- Motion Sensors with Override

### Essential Controls

This option offers a basic system that gives real-time functions through a phone or tablet application. This includes:

- On/ Off
- Dimming
- Colour Change (RGB)

### Group Controls

Group controls offer the pre-programming of grouped luminaires and can incorporate more complex scenes:

- Wireless or Wired System
- Scene Setting
- Tablet or Switch Operated

### DMX System

Commonly used in stadiums and large venues for enhancing visual entertainment or can be used on a smaller scale to create RGB lighting scenes for facade or architectural lighting.

Simple or complex light shows  
compatible with audio visual effects

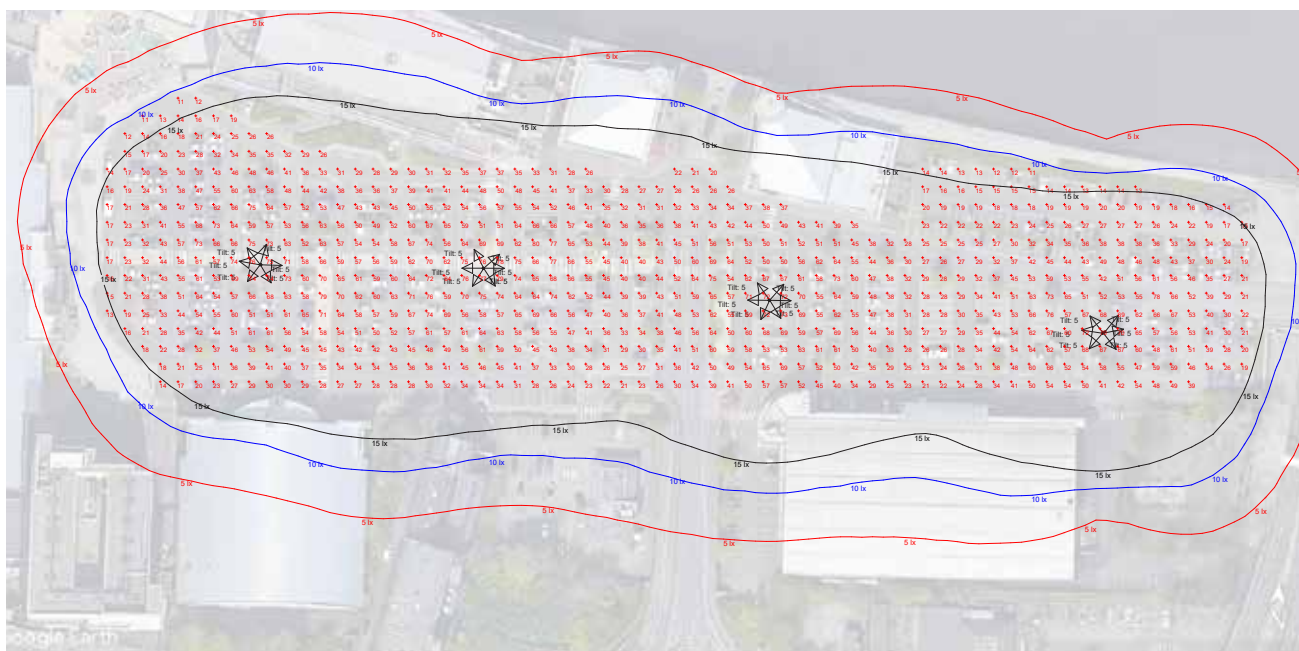


## LIGHTING DESIGN

Our team of expert lighting designers hold the highest standard of lighting design qualifications and training. With continuous development in this area, our designers use their wealth of knowledge and state-of-the-art software to create energy efficient solutions whilst maintaining the perfect aesthetic for each individual project.

Naturally, we maintain focus on the progression of the design techniques used in order to create innovative lighting designs for our client-base. The latest advancement in our portfolio of design technologies, is the production of 3D and VR design, capable of producing photorealistic visual representations.

Best utilised in the planning stages of largescale projects where standard lighting designs are not adequate and may not accurately represent the visual effects and lighting levels for non-lighting professionals. Using the combination of technical lighting design and 3D visuals, we can perfectly portray the end results, down to lighting effects, reflections and even compliance with environmental regulations.







# MAST SYSTEMS

Choosing the right mast system for your site is important, our team will guide you through the options, taking into consideration locations, usage and available space. We have a number of options to ensure your system works perfectly for you.

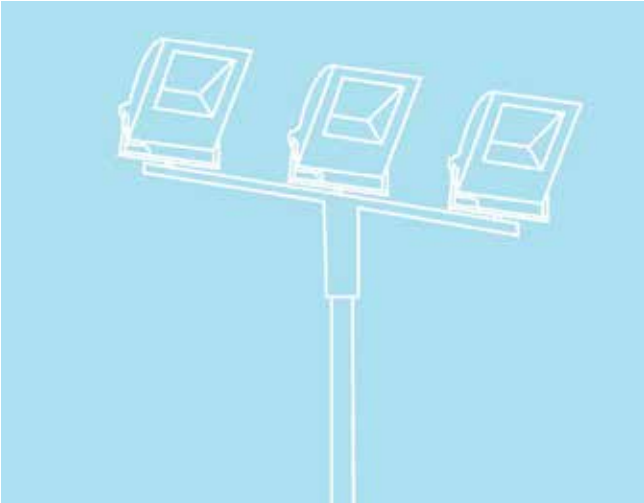


# MAST SYSTEMS

There are a variety of high mast lighting structures, and the different options each have pros and cons. It's essential that the high mast system is appropriate for the site and ongoing requirements

## Fixed Masts

Fixed masts are exactly that - fixed. Teamed with efficient lighting, they offer a great way to illuminate large and spacious areas, such as car parks, aviation and maritime settings. Maintenance must be carried out on specialist equipment at height.



### Features & Benefits

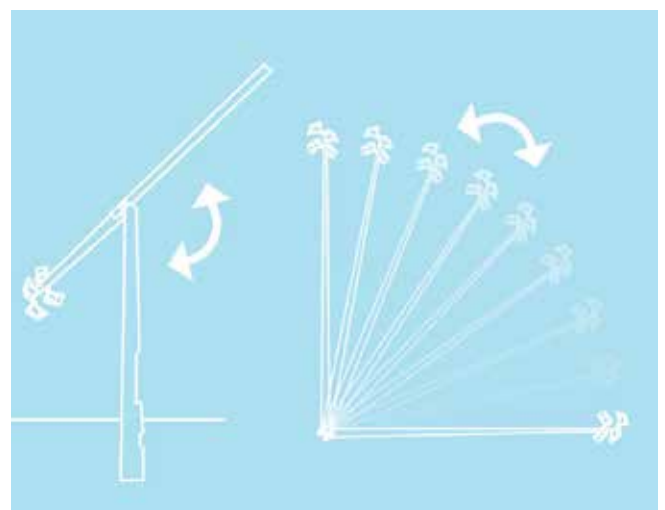
- Available up to 40m
- Easily maintained as no moving parts
- Standard installation process

## Mid-Hinged and Base-Hinged Masts

These types of mast are popular with sports facilities. They hinge either in the middle or at the base, allowing easy access to the lighting at ground level. With these masts, clearance is needed to drop the mast, meaning they aren't always suitable for sites that are tight on space.

### Features & Benefits

- Mid-hinged available up to 15m
- Base-hinged available up to 40m
- No need for expensive high level platform equipment
- Reduced health & safety risks as any maintenance can be carried out at ground level



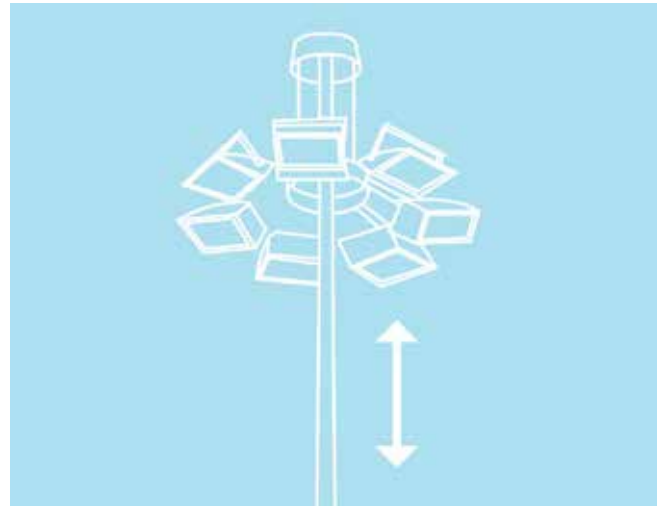


## Lowering Head Frame

These masts have the luminaires fixed to the frame which is lowered down the length of the mast using a powered winch and pulley system. These are ideal systems for working safely at ground level and they can be used even in the most space restricted areas.

### Features & Benefits

- Great for areas with space restrictions as no ground clearance is required
- Simplified processes for maintenance utilising a powered winch & pulley system
- No need for expensive high level platform equipment
- Reduced health & safety risks as any maintenance can be carried out safely and easily on the ground



## Bespoke Systems

Kingfisher can work with its clients to develop bespoke mast solutions that meet the needs of a specific project, where off the shelf designs don't. This can include bespoke painting, finishing options and height requirements.



# MAST CONSTRUCTION

As experts in columns for over 35 years', Kingfisher Lighting has amassed a comprehensive selection to suit many project specifications.

## Features & Benefits

- Constructed from steel plates and cut/folded to form 16-sided sections for onsite assembly
- Freestanding continuously tapered structure
- Require no bolted sections or site welding
- Framed door which is a type of reinforcement
- The 25m & 30m have some supplementary gussets between bolt holds
- Earth terminal (10mm diameter stainless steel bolt) attached to the base internally



## Corrosion Protection

In accordance with BS EN ISO 1461, Kingfisher Lighting's masts are hot dip galvanised after fabrication.

## Plascoat PPA 571

Axalta's Plascoat® PPA 571 is a thermoplastic powder technology designed to provide long-term corrosion protection for metal against the most demanding environments.

## Features & Benefits

- Superior resistance to salt, sea, sand and sun
- Excellent abrasion protection
- High flexibility
- Excellent environmental credentials: no bisphenol A (BPA free), no VOCs, no TGIC, no phthalates, no isocyanates, no halogenes and no heavy metals
- Sound insulation
- Electrical insulation
- Excellent coverage of edges and welds
- Very low smoke in event of fire

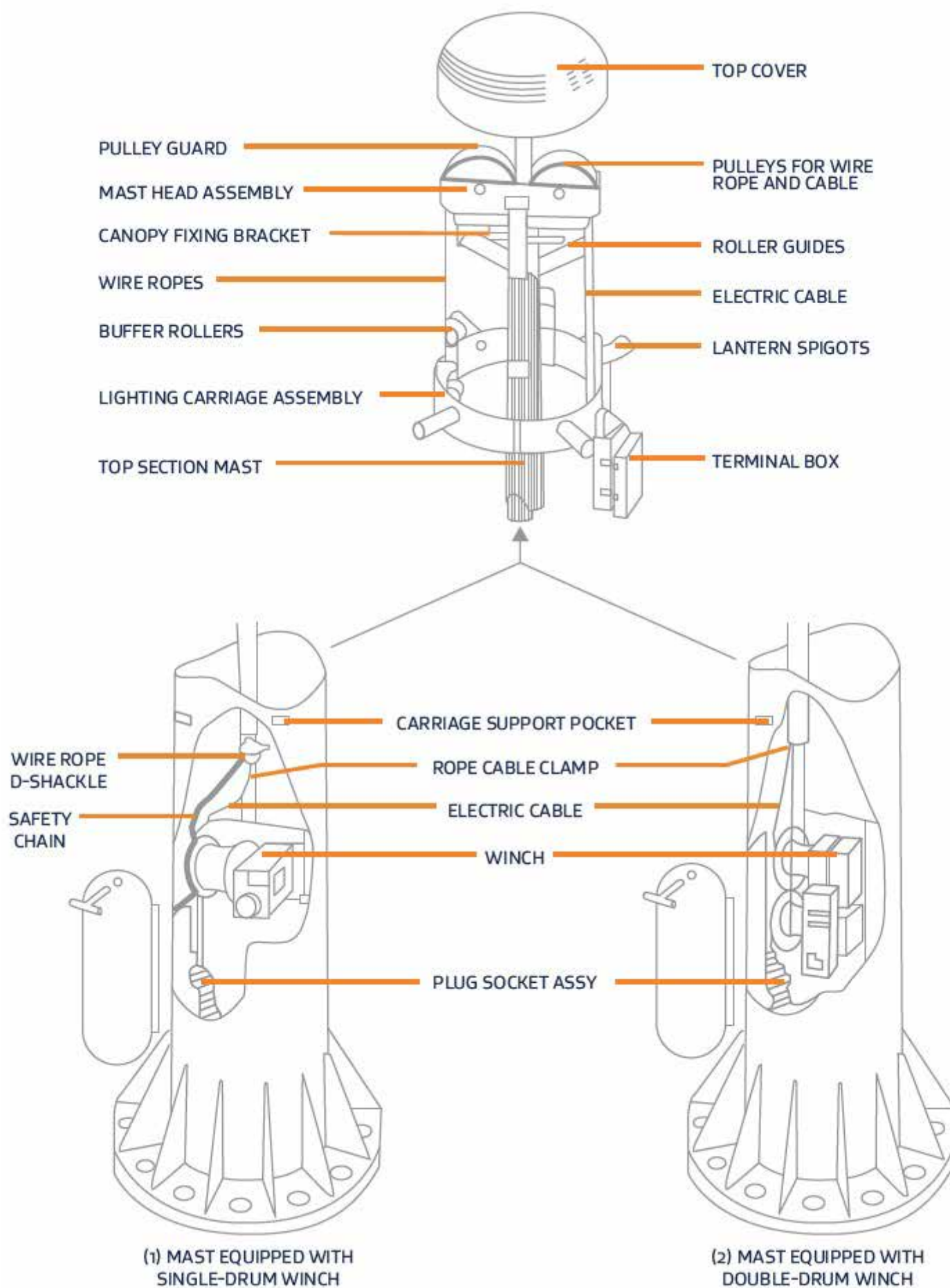


## Technical Details of Column Variants

| KINGFISHER PRODUCT CODE  | UNITS             | KL HM20-1-1     | KL HM25-1-1     | KL HM30-1-1     |
|--|-------------------|-----------------|-----------------|-----------------|
| HEIGHT   |                   | 20m             | 25m             | 30m             |
| TOP DIMENSION - A/F  | mm                | 117             | 116             | 116             |
| DOOR APERTURE - L x W  | mm                | 1040 x 245      | 1040 x 245      | 1040 x 245      |
| F/PLATE - DIMENSION OUTSIDE DIAMETER   | mm                | ø 630 x 35      | ø 650 x 40      | ø 720 x 45      |
| A/BOLT - P.C.D   | mm                | 540             | 550             | 610             |
| A/BOLT - QTY x ø x L   | mm                | 12 x M24 x 820  | 12 x M24 x 820  | 16 x M24 x 820  |
| F/PLATED COLUMN WEIGHT   | Kg                | 589             | 830             | 1149            |
| MAX WEIGHT / WINDAGE AREA<br>IN WIND LOADING REGIONS:                        |                   |                 |                 |                 |
| 38 m/s TCAT 2  | Kg/m <sup>2</sup> | 400 / 3.53      | 400 / 2.21      | 400 / 2.08      |
| 42 m/s TCAT 2  | Kg/m <sup>2</sup> | 400 / 2.71      | 400 / 1.64      | 400 / 1.31      |
| 46 m/s TCAT 2  | Kg/m <sup>2</sup> | 400 / 2.11      | 400 / 1.23      | 400 / 1.13      |
| 50 m/s TCAT 2  | Kg/m <sup>2</sup> | 400 / 1.66      | 400 / 0.91      | 400 / 0.83      |
| 54 m/s TCAT 2  | Kg/m <sup>2</sup> | 400 / 1.31      | 400 / 0.62      | 400 / 0.41      |
| 58 m/s TCAT 2  | Kg/m <sup>2</sup> | 400 / 1.04      | 400 / 0.31      | N/A             |
| MAX DESIGN O/T.MOM. @ G.L  | Nm                | 182209          | 231518          | 377368          |
| TOTAL MAX DESIGN SHEAR<br>LOAD   | N                 | 16637           | 19559           | 27176           |
| FOUNDATION SIZE (F/P<br>COLUMN - GROUND PRESSURE:<br>200 KN/m <sup>2</sup> ) | m                 | 2.3 x 2.3 x 1.5 | 2.5 x 2.5 x 1.5 | 2.9 x 2.9 x 1.7 |



# WINCHES AND MECHANICS



# Technical Details of Column Variants

## Winch General

Each mast is provided with a single or double drum winch suitable for the following duties:

- A. Raising and lowering of the lighting carriage
- B. Supporting the lighting carriage in the docked and raised position in permanent suspension
- C. Raising and lowering the lighting equipment at the stated working loads

## Safe Working Load

The safe working load of the carriage and the system have been designed to 350kg maximum for the single and 700kg for the double drum winch system.

## Drive & Speed of Operation

The winch is suitable for hand and power operation.

The maximum speed for use with a power tool and torque limiting device shall not exceed manufacturers specifications.

## Security Against Runaway

The winch supplied is of a self-sustaining type and with a gearing ratio of 50:1. The winch is entirely self-sustaining under all normal working operation.

## Winch Gearbox Servicing

The winch gearbox provided has a life expectancy of 12000 hours.

Due to the designed service requirement for the gearbox, it is considered sealed for life for the lifetime of the system and no oil changes are required.

## Wire Ropes

The wire ropes are manufactured from flexible stranded stainless steel with a safe working load of 400kg and a safety factor of 5.

## Power Tool & Torque Limiting Device

The power tool has a non-latching remote switch with an extension. It has a forward and reverse switch at multiple speeds. The torque limiting device has been pre-set to suit the application.

## Testing

To enable testing of the lighting with the carriage of the system being at ground level, the use of the test lead will be required unless the system is a double disconnect system.

Prior to lowering the carriage, disconnect the plug and socket in the base of the mast and replace the socket with the socket of the test lead. Lower the carriage and once the carriage is in the lowered position, carry out the testing procedure as required.

# HEADFRAME ASSEMBLY

The head frame assembly is designed and constructed for operation over the lifetime of the system without the necessity for maintenance attention. Although the head frame assembly is designed in such a manner, it is advised that a bi-annual check is made on the head.

## Features & Benefits

- All steel components are protected by hot dip galvanising
- The internal pulleys bring the headframe down to ground level using neoprene rollers to protect the frame and the mast
- The pulley wheels consist of corrosion resistant material and are fitted with maintenance free bearings
- Fitted and locked to the top of the mast to prevent rotation
- Close fitting guards provided to prevent the wire ropes or cables from entanglement
- Weatherproof canopy for protection
- Lantern carriage guides and stops fitted
- Slips over the top of the mast shaft





# LOWERING HEADFRAME MASTS

The head frame assembly is designed and constructed for operation over the lifetime of the system without the necessity for maintenance attention. Although the head frame assembly is designed in such a manner, it is advised that a bi-annual check is made on the head.

## Features & Benefits

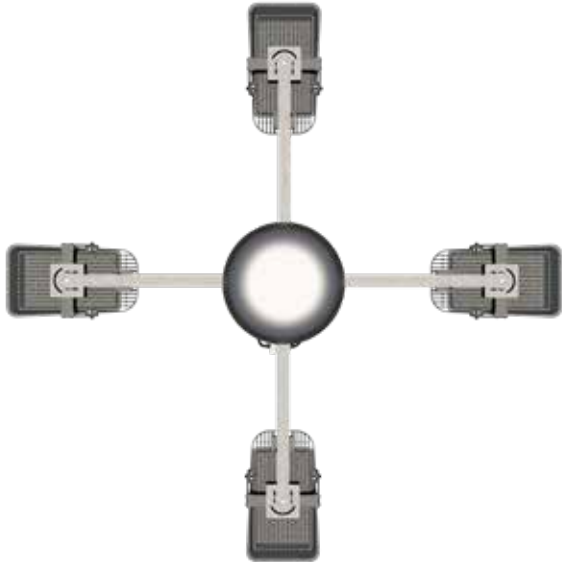
- An aluminium spun canopy provides protection for the pulley assembly at the mast head
- A junction splitter box provides wiring within flexible conduits to luminaire spigots
- The headframe and carriage are fabricated from mid-steel and galvanised for strength and durability
- Fully sealed maintenance free aluminium pulleys, needing no lubrication, allow the cable to run smoothly
- Stainless steel hoist ropes are robust enough for any high mast system
- Mechanical winch systems are used to safely raise and lower the high mast headframe
- Single or double winches are available depending on the headframe load
- A dedicated power tool and accessory pack come as part of the package for easy winding of the pulley system
- 7 core cable used to control various fittings, photocells and dimming, where needed



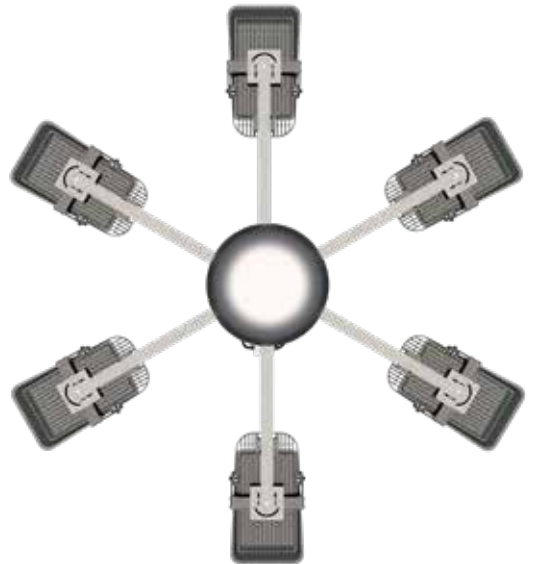
# HEADFRAME EXAMPLES

## AMNIS Match

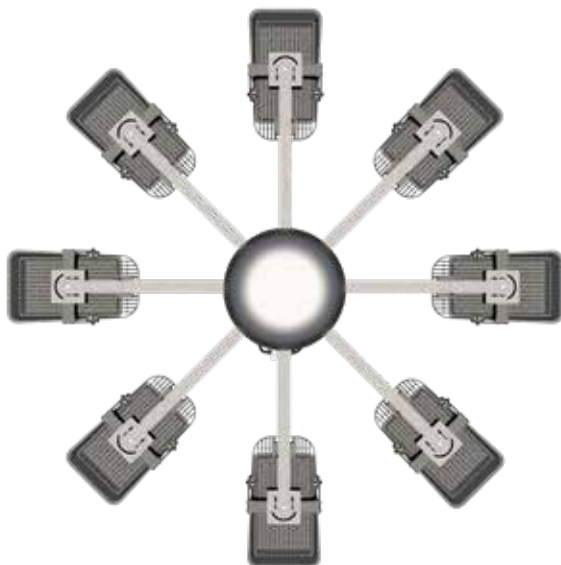
4x Luminaires



6x Luminaires



8x Luminaires



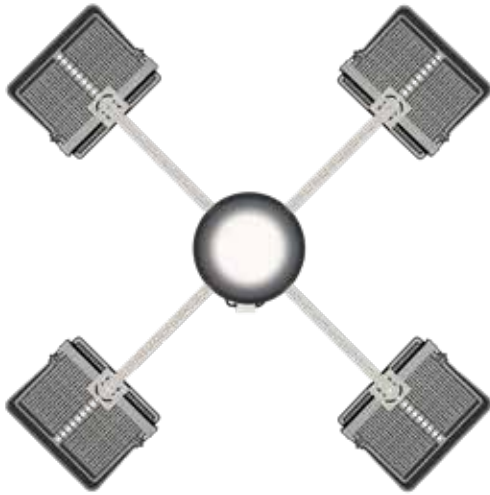
10x Luminaires



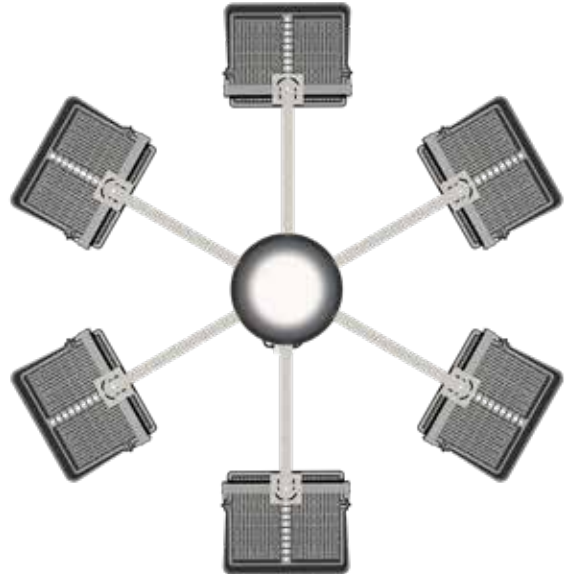
# HEADFRAME EXAMPLES

## AMNIS Flood

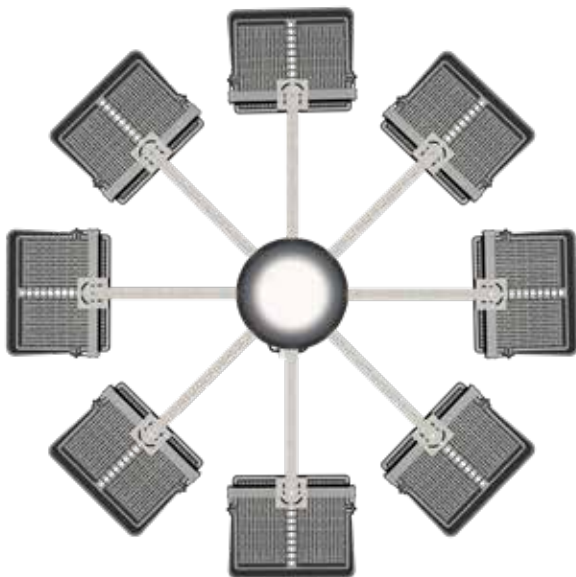
4x Luminaires



6x Luminaires



8x Luminaires



Assembly



# MAINTENANCE

High mast system maintenance is essential to ensure both the performance and health & safety of your lighting and to remain compliant with site insurance requirements. It's your responsibility.

Whether considering maintenance of an existing system or a new scheme, Kingfisher has the perfect tailored solution. Our maintenance packages, which are compliant with ILP PLG07, have been designed to make sure you have the right level of cover for your system.

Our fully trained and certified team can maintain and repair all kinds of high mast lighting, both our own and non-Kingfisher systems.





# MAINTENANCE PACKAGES

Fixed or bespoke maintenance options to ensure the safety, efficiency and lifetime of your high mast lighting scheme.

| ACTIVITY   | LEVEL 1 | LEVEL 2 | LEVEL 3 |
|--|---------|---------|---------|
| Check the winch and fixings  | ✓       | ✓       | ✓       |
| Lower the carriage ring to check rope suspension points and suspension belts   | ✓       | ✓       | ✓       |
| Repair of lanterns and control gear  | ✓       | ✓       | ✓       |
| Check base mounted electrics   | ✓       | ✓       | ✓       |
| Raise the carriage unit and leave the mast fully lit   | ✓       | ✓       | ✓       |
| Use of cherry picker to visually check the head and pulleys, the wire ropes over the full length and the mast structure itself | -       | ✓       | ✓       |
| Visual check of foundations, foundation nuts and protective material   | -       | ✓       | ✓       |
| Structural assessment  | -       | -       | ✓       |
| Ultrasonic testing   | -       | -       | ✓       |
| Torque pull out tests  | -       | -       | ✓       |
| NDT if required  | -       | -       | ✓       |

Speak to our team to create your bespoke package





# PROJECTS

With over 35 years of proven experience delivering projects for high profile clients, our projects speak for themselves. These projects include ports and maritime settings, airports, major sporting grounds and beyond. Our dedicated teams work tirelessly to ensure our customers expectations are met, while ensuring all environmental considerations and regulations are compliant.







# Key Contacts

## Project Team

### **Lee Hayter**

National Sales Manager

M: +44(0)7393 148858

E: [lhayter@kingfisherlighting.com](mailto:lhayter@kingfisherlighting.com)

### **Patrick Daly**

Business Development Manager

M: +44(0)7393 148858

E: [lhayter@kingfisherlighting.com](mailto:lhayter@kingfisherlighting.com)

### **Thomas Ford**

Project Sales Engineer

M: +44(0)797 4454611

E: [tford@kingfisherlighting.com](mailto:tford@kingfisherlighting.com)

### **Robyn Du Preez**

Project Sales Engineer

M: +44(0)7379 089156

E: [rpreez@kingfisherlighting.com](mailto:rpreez@kingfisherlighting.com)

## Project Support

### Project Team

T: +44(0)1623 703109

E: [highmast@kingfisherlighting.com](mailto:highmast@kingfisherlighting.com)

Kingfisher Lighting Ltd  
Crown Farm Way  
Crown Farm Industrial Park  
Nottinghamshire  
NG19 0FT

T: +44 (0)1623 415900  
E: [highmast@kingfisherlighting.com](mailto:highmast@kingfisherlighting.com)  
W: [kingfisherlighting.com](http://kingfisherlighting.com)



Kingfisher Lighting Ltd  
Crown Farm Way  
Crown Farm Industrial Park  
Nottinghamshire  
NG19 0FT  
UK

T: +44 (0)1623 415900  
E: [sales@kingfisherlighting.com](mailto:sales@kingfisherlighting.com)

[kingfisherlighting.com](http://kingfisherlighting.com)