

### Your Lighting Solution Partner

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# About us

- ✓ AIMACS is a diversified supplier of engineered critical components and customized technology solutions for the energy, transportation and construction specially in Airports and Ports segment.
- ✓ Building on its heritage of innovation, AIMACS delivers lasting solutions that strengthen our modern way of life.
- Our portfolio of brands and businesses in a variety of disciplines sharing one common goal: "To Make Our World a Better Place".
- ✓ Operating out in Dubai, U.A.E since 2012, our skilled employees and engineers work daily to find newer technology to serve the local and regional community.

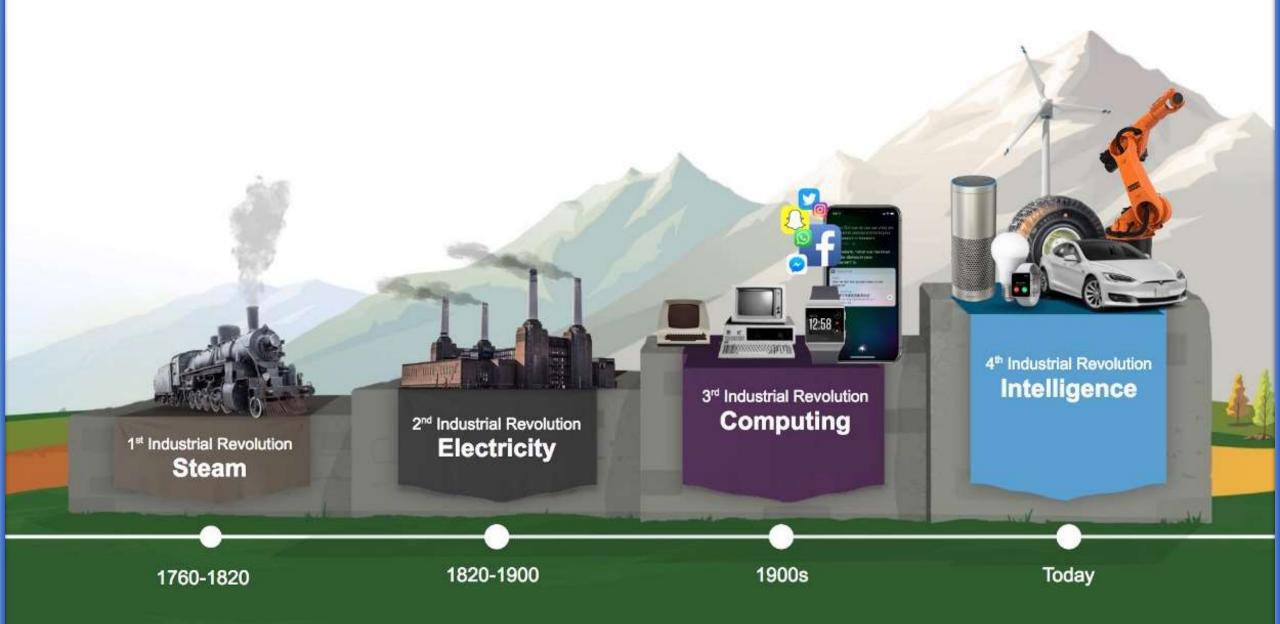
# Vision

 Earning high levels of customer confidence, maintaining highest degree of business ethics and customer care and by always exceeding the customers' expectations.

## Mission

✓ To be your choice for Electrical & Mechanical System solutions across the Middle East, with best proposals and with trust on quality products, excellent services and long-lasting relationships.







# Revolution of Technology

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Land Line Phones



MAIL



HID Lamps



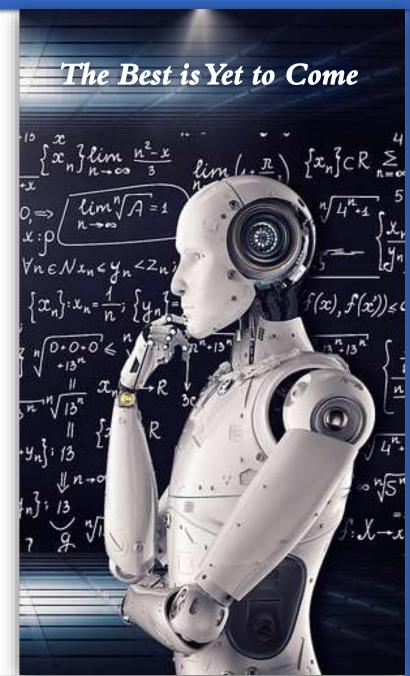
Smart Mobile Phones



E-MAIL



LED Lights





# HIGH MASTS

# Applications & Segments

#### > Transportation

- International Airports
- Ports
- Railway
- Roads & Highways

## > Sports

- Stadium
- Training Pitches
- ➤ Car parks









# N.C.M History & Overview

- 1980: Foundation of N.C.M ( 40 years experience )
- 1995: Quality Certificate ISO 9002
- > 1996: Automatic Plant for Polygonal and Round Conical Poles
- > 2003: Second factory in Via Marconi ISO 9001 certificate
- 2005: CE EN 40 certificate
- 2013: ISO 3834 EN 12899 certificate
- 2014: UNI EN 1090-2:2011
- More than 12.000 masts installed







### OUR PARTNER for HIGH MASTS



- High masts with mobile crown NEOFAR
- ✓ High masts with mobile crown MEGAFAR
- High masts with mobile crown CITYFAR
- High masts with FIXED PLATFORM



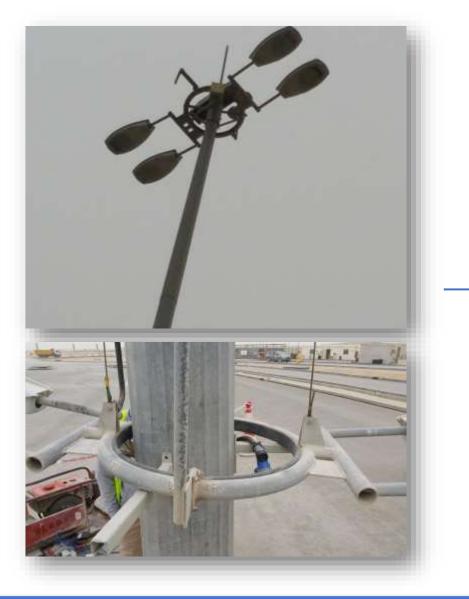
# **Revolution of HIGH MASTS**





# Revolution of HIGH MASTS

X 2-Rope / 3-Rope System



#### ✓ Aluminum Guide Rail System



#### General Trading L.L.C

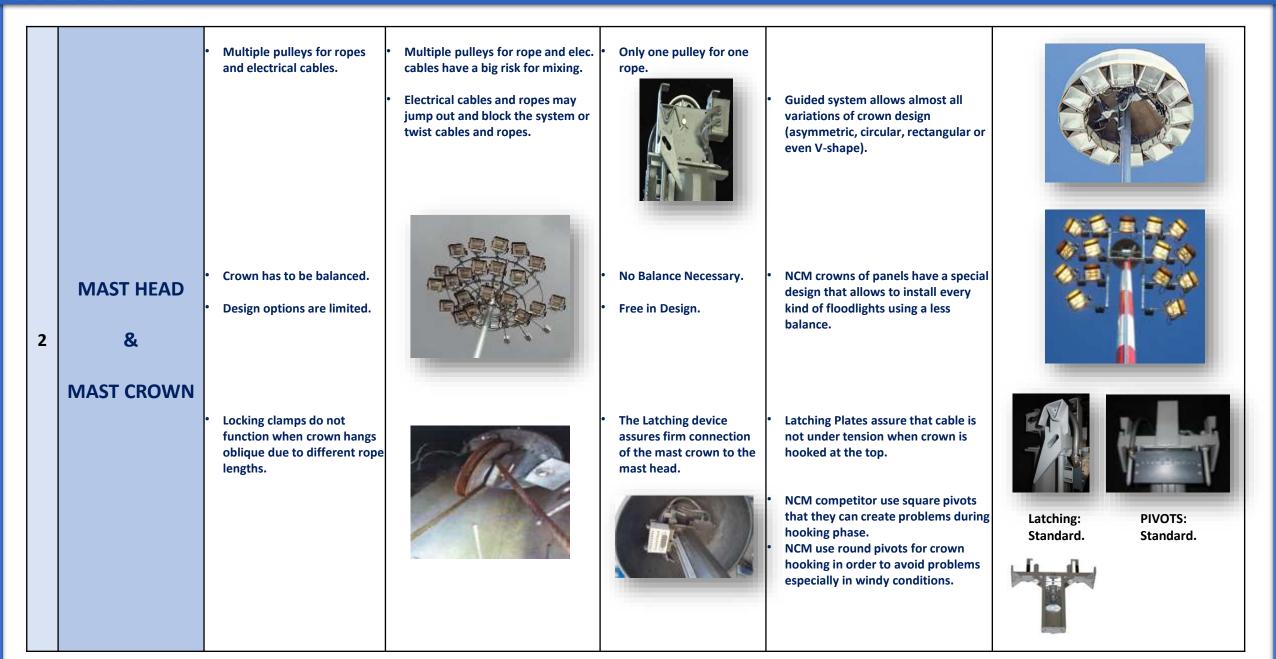


# Comparison between

# Multiple Rope System and Guide Rail System



NC	FEATURE OR ISSUE	MULTIPLE ROPE SYSTEM	N C M GUIDE RAIL SYSTEM
1	GUIDE RAIL, CARRIAGE & LOWERING / LIFTING	<text><list-item><list-item><list-item></list-item></list-item></list-item></text>	<ul> <li>Aluminum Guide Rail: Standard.</li> <li>The guide rail along with the rolling carriage allows a secure lowering and raising even under windy conditions and prevents the crown from swaying and hitting or damaging the mast.</li> <li>(wind - max 50 km/h).</li> <li>If rope is not under tension, safety brake is activated immediately and clamp firmly with the guide rail.</li> <li>Only 1 Operator required.</li> <li>Remote Control: Standard.</li> <li>Memote Control:</li> <li>Standard.</li> </ul>



3





4	LIMIT SWITCH	• Difficult to Position it.	<ul> <li>NCM competitor position it at the top of mast.</li> <li>In case of problem, you have to go at the top with crane with cage.</li> </ul>	<ul> <li>NCM position limit switch on the crown in order to give the possibility to check it in case of ordinary maintenance.</li> </ul>	
5	ROPE & ROPE FAILURE	<ul> <li>Length of each rope will differ over time.</li> <li>Mast crown hangs oblique.</li> <li>difficult or impossible to lower.</li> <li>damages on mast likely.</li> </ul>	<ul> <li>Single rope and guide rail assure permanent horizontal positioning of crown.</li> <li>No rope greasing required.</li> <li>Crown will hang level on the guide rail.</li> <li>no damages on mast Crown.</li> <li>no damages on mast.</li> </ul>	<ul> <li>Single rope design has 6-fold security and emergency brake.</li> <li>Guide rail and rolling carriage assure smooth lowering and raising of the mast crown.</li> <li>Emergency brake and guide rail will hold the mast crown securely, firm and level.</li> </ul>	



6	WINCH AND MOTOR INSIDE OF MAST	• Not available.	• Standard.	<ul> <li>Handling of mobile winches is cumbersome, time consuming and requires additional staff.</li> <li>NCM system is more safe, because it is equipped with self-breaking motor</li> </ul>	
7	SYSTEM MAINTENANCE	<ul> <li>Required too much Maintenance and so many failures repeat again and again.</li> </ul>	<ul> <li>Not required, including mast head pulley, winch and rolling carriage.</li> </ul>	<ul> <li>Pulley is running on long life bearings. Our competitor say that their system does not require any greasing.</li> </ul>	<ul> <li>As per all components in movement, it is not true that they are not subjected to maintenance. It is suggested to have a periodic test. Spare parts are not needed considering their long life. NCM mobile system guarantees the possibility to do maintenance on many high masts at the same time.</li> </ul>

Key UNIQUE FEATURES

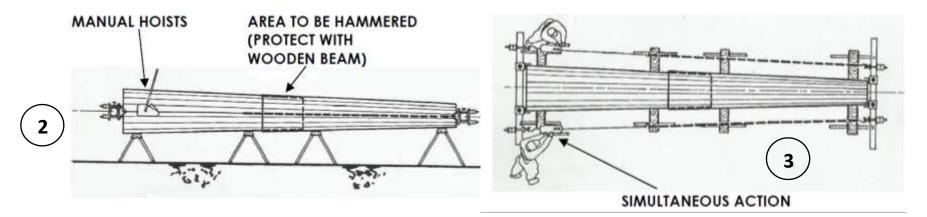
# High masts with mobile crown - MEGAFAR

□ The high mast "MEGAFAR" comprises of the following elements:

#### SHAFT:

- 1- It has a conical shaped trunk with polygonal cross section, made of S355 J2G3 UNI EN 10025 sheet steel press-folded and longitudinally welded.
- 2- The welding is in accordance with a process certified by the Italian Institute of Welding.
- 3- The shaft is made in sections to be assembled on site using a self-locking slip joint compression fit system.
- 4- Space is provided in the base section for the winch and electrical switchgear and wiring.







#### CROWN GUIDED MOTORIZED MOBILE SYSTEM:

- Top of the pole:
- 1- the return pulley for operating the cable is positioned at the top of the pole.
- At the upper extremity of the pole the following fixtures are also mounted:
- 2- Hooking device of the mobile platform to reduce load on the rope from the weight of the crown and the floodlights.
- 3- Anti-rotation dowel pins (pivots) designed to neutralize the force of the wind on the floodlights.



#### Mobile crown:

Made of steel, it allows the installation of floodlights and relevant control gears. It locks at the top of the pole through a mechanical hooking device. The mobile crown is integral with the sliding carriage, which houses the parachute brake internally.







#### Guide:

In light aluminum alloy and fixed along the length of the shaft it allows the correct raising/lowering of the mobile crown even in windy conditions. It offers a smooth surface contact with the parachute brake.

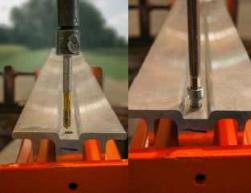
#### Carriage:

In hot -dipped galvanized steel sections.

The movement in the aluminum guide is with sliding blocks/shoes. The hooking is achieved by the use of two laminated steel rods. The exclusive "NCM" PARACHUTE BRAKE system is positioned at the center of the carriage.

It includes a block, where the cable is secured, a regulation screw and a toothed lever which acts as a brake during the operation of the brake spring. The braking of the carriage takes place every time the traction rope loses tension.

**Cable:** It is made in high corrosion -resistant galvanized steel.









#### Driving gear:

It consists of an irreversible reducing gear positioned inside the mast and it is connected to a drum for the winding of the rope. The gear is driven by a mobile motor which could be used for several masts. The mobile motor is powered by the same line for the electrical supply of the floodlights. All controls are low voltage 24v.

#### **Electrical accessories:**

An interlocking socket positioned inside the housing at the base of the mast delivers power to the floodlights. This cable is fixed inside the mast. At the top of the pole a set of male/female socket allows an infinite number of operations.

#### Protection cover:

The electrical and locking devices at the top are protected by a fiber glass dome cover.

#### Finishing:

The complete structure is zinc hot dip galvanized according to standards UNI EN ISO 1461.







WATCH THE VIDEO

NCM MEGAFAR

Aluminum Guide Rail System





# L E D S



# LEDs: THE BULBS BEHIND THE LIGHTING REVOLUTION





# How Energy-Efficient are

LEDS?

LEDs really are **Significantly More Energy-Efficient** than other types of bulbs. A **12W LED** stands to save you somewhere between **75% to 80%** the energy usage of a traditional **60W** incandescent bulb.



# Do LED bulbs have better longevity than other types of bulbs?

#### We can expect an **LED bulb to last for 20,000 hours** on average – just compare that with an **incandescent bulb** which might **only last for 1,000 hours** of use.

With the price of LEDs now very competitive, it doesn't take long for the bulb to pay for itself, and to create great value for long after.

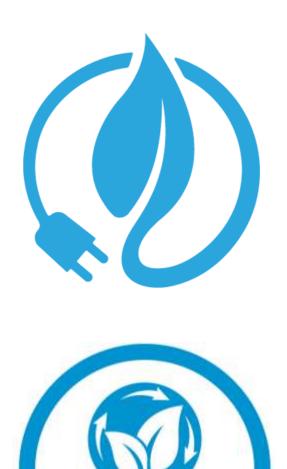
## LEDs are VALUE FOR MONEY





## • Average Life Time of Different type Bulbs •

No.	Types of Bulbs	Typical Average Rated Life
1	Incandescent	750 - 2,000 hours
2	Fluorescent	16,000 - 28,000 hours
3	HID	10,000 - 24,000 hours
4	Compact Fluorescent (Plug-in)	10,000 - 20,000 hours
5	Compact Fluorescent (Screw-based)	8,000 - 10,000 hours
6	Halogen	2,000 - 4,000 hours
7	LED	40,000 - 50,000 hour

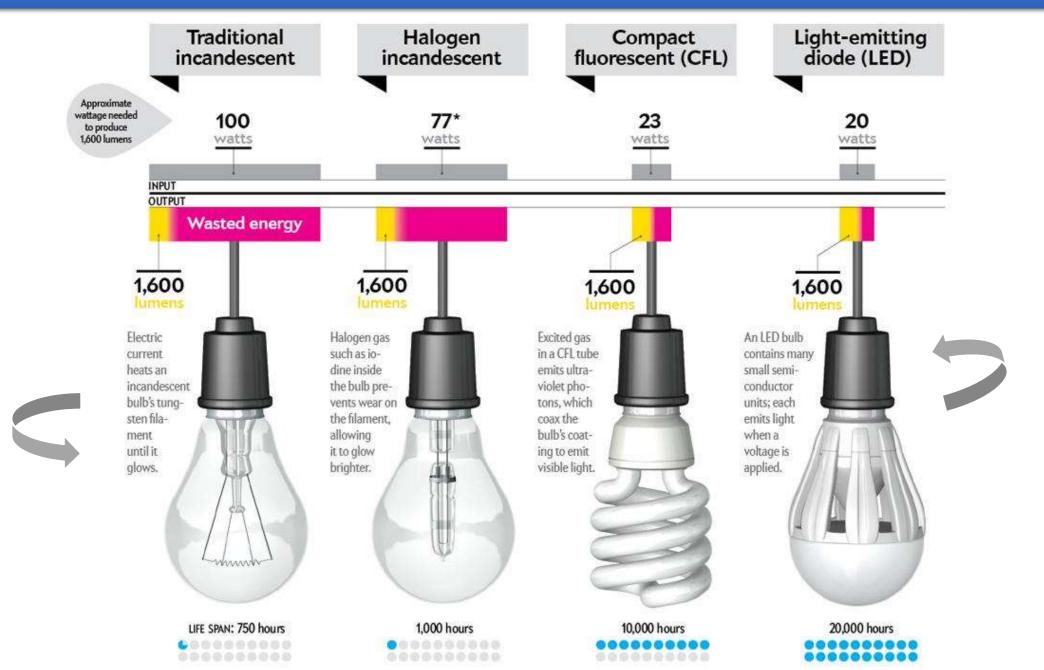




# **LED LUMENS TO WATTS CONVERSION CHART**



How do LEDs compare with other types of bulbs?



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#### What kinds of lighting formats do LEDs cover?

LEDs are now the most common lighting type, and can be used in almost all lamp formats, functions and types, including standard lamps, strips and LED signs.

It's basically in all indoor and outdoor lighting.







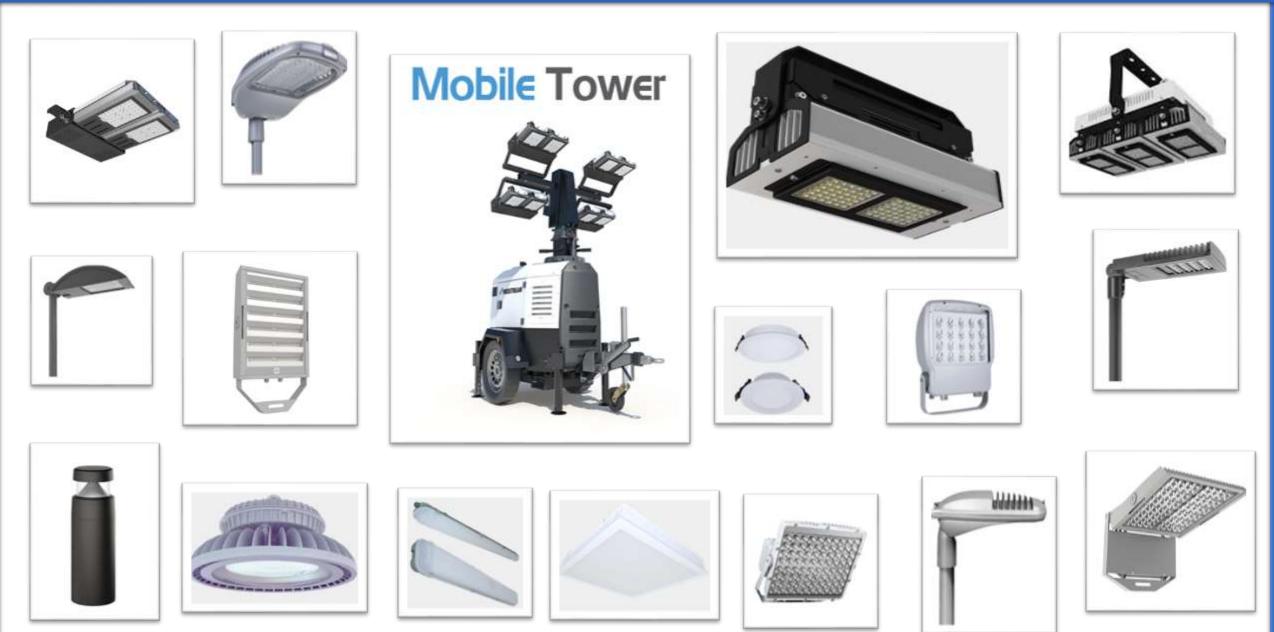
















# LED FLOOD LIGHTS



# Revolution of **Floodlighting**

**JOD LED** 

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#### Presidential flight – Abu Dhabi









8 Halogen Flood lights 1000 WATT EACH Eav = 8 [lx]

**5 LED Flood lights** 720 WATT EACH Eav = 38 [lx]







#### ✓ Ruler's Hanger – Sharjah Airport

Before



X Poor Light Uniformity

**10 Halogen Flood lights** 1000 WATT EACH Eav =  $\dots$  [IX] H Eav =  $\dots$  [IX] v



**10 LED Flood lights** 560 WATT EACH Eav = 50 [Ix] H Eav = 80 [Ix] V After







# Aviation Experience Matters





**ICAO** 

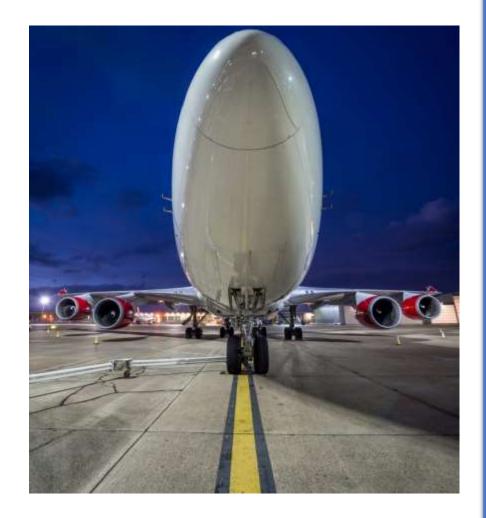




# **MIDSTREAM**

#### High mast LED lighting engineered to tackle your precise aviation needs

- 100+ global airport projects completed from major international hubs to small regional airports.
- We're the leading supplier of LED lighting systems for airport aprons.
- Our lighting designs are always fully compliant to required standards and regulations including ICAO, EASA, FAA, MOS139 and more.
- We offer easy retrofit solutions.
- Our luminaires are heavy-duty, highly efficient, and durable.
- We offer plug and play, including control systems, functionality.
- We use our proprietary technology.
- And our solutions are low glare.

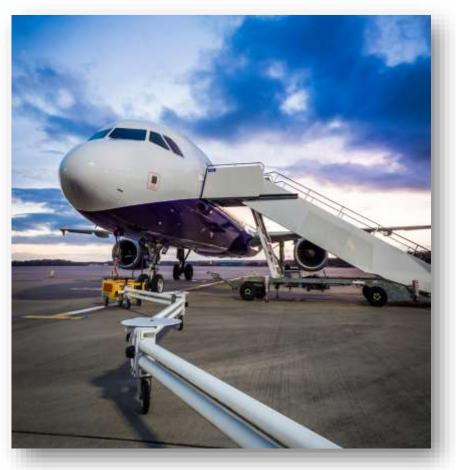


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## $\infty$ You can trust us to:

- Reduce your energy consumption.
- ✓ Cut maintenance costs.
- Minimise any environmental impact.
- Meet local or international requirements.
- ✓ Reduce pilot glare.
- Optimize apron layouts.
- Provide smart controls for dimming or zoning.
- And of course, vastly improve the quality of your lighting to help your operations run safely and smoothly.







## Maintenance and warranty – protecting your investment

- ✓ The great thing about airport LED lighting is it requires far less maintenance.
- It's important though that you protect your investment to maximize the life span and return on investment.
- This is especially in true sectors like aviation where compliance and regulations come into play.







### Pioneering products, expertly engineered

LED Lighting products engineered to your precise environmental needs.

# **Titan Series**



Applications: Aviation and Maritime.

One of our flagship products that continues to be elected as a **high-performance solution** for maritime and aviation clients all over the world.

The Titan Series is a highly asymmetric floodlight providing an excellent solution for low glare applications. Delivering maximum light levels on very precise applications and designated areas.

Each floodlight in the Titan Series has been engineered to handle the harshest of environmental conditions whilst delivering high performance and long life.

## **Modus** Series



Applications: Aviation, Maritime.
a cost effective solution for
high powered applications.
It's modular design allows for a versatile
approach to lighting design,
with new ways to combine different power
products in the same location.
ease of installation.
the adaptability and reliability in even
the harshest of environmental conditions.

# **Modus R Series**



Applications: Aviation, Sports Stadia. The lightweight, extremely versatile, The low-glare, broadcast-ready, flicker-free LED floodlight has a remotely mounted single IP67 electronic control gear that makes it easy to install and can drive up to 216 LEDs with multiple photometric distributions. Its feature-rich dynamic controls (DMX, DALI, 1-10v) and remote monitoring makes it a highly scalable solution, for a high-end user experience in UHD and super slow-motion conditions.

## Modus S Series



Applications: Small & Medium Sports Area. Modus S Series delivers high lumen packages without any excess weight.

Designed to specifically reduce light spill for neighbors and residents providing an ideal solution for areas such as community / inner city facilities.

Manufactured for **easy retrofit** onto existing structures including remote mounted drovers for ease of access.

The Modus S is also designed to **support** wireless control.

# **Atlas Series**

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Applications: Maritime, Aviation. Designed with Proprietary high asymmetry optics to provide a low glare solution and manufactured from recyclable, extruded aluminum and powder coated stainless steel housing to survive the harshest of environmental conditions including high temperatures and saline environments. Built with flexibility in mind, it's modular design, versatile brackets and adapters ensure all products in the Atlas Series can be deployed easily into existing mast infrastructures.

# Atlas R Series



Applications: Large Sports Areas. the Atlas R Series is known for delivering uncompromising light performance delivering up to 90CRI for U-HD TV broadcasting. Remote drivers provide a high light to weight ratio and a stainless steel construction improves structural integrity and life of product in challenging sporting environments. A great retrofit solution for 2kW metal halide floodlights.

### **Docker Series**



Applications: Maritime (Mobile equipment). The Docker Series is a **heavy-duty LED floodlight** that's responsible for lighting some of the world's key maritime infrastructures and working machinery such as STS and RTG cranes. Built with a robust 316 stainless-steel chassis to resist the harshest environments and tested for salt spray for 1000h according to ASTM B117 and for vibrations up to 6G and 100.000 cycles according to ANSI C136.31-2010. it **provides high performance and high durability** 

within a low weight and compact size solution.

# **Mobile Tower Series**



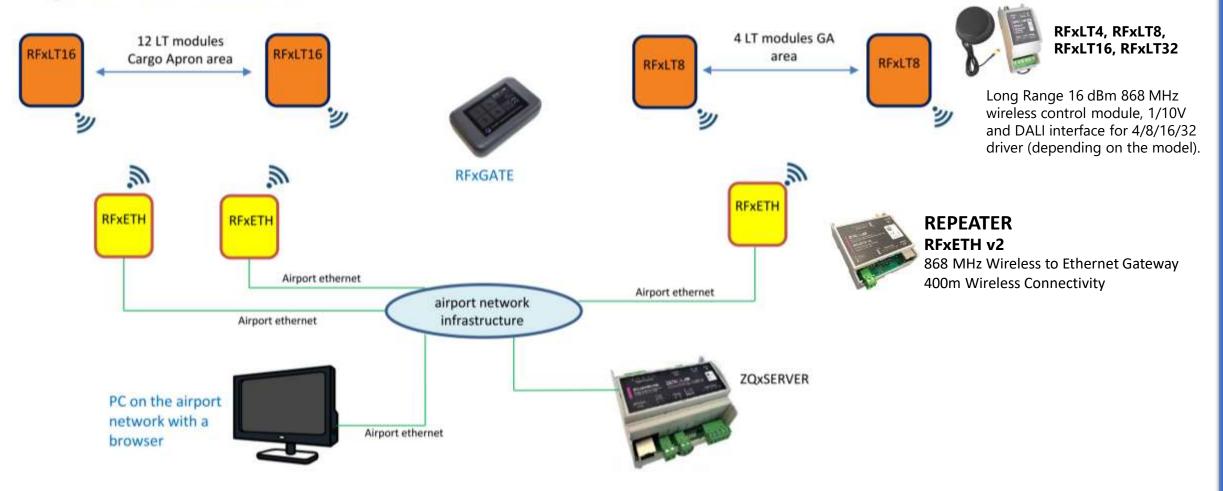
Applications: Aviation, Sports. An adaptable, compact and easy to transport solution for our global aviation and sports clients, the Mobile Tower features an adjustable 9-metre vertical, hydraulic mast with four highly efficient, asymmetric 326W LED Titan floodlights. Designed specifically for large area lighting with low glare conditions, this solution works for a broad spectrum of heavy-duty mission-critical applications where quality and reliability are paramount. Delivers instant compliance to ICAO for airport operators.

ALL Our Products standard with **DALI** input – to provide the ultimate in lighting control for event light shows or dimming.



Control System for Dimming, ON/OFF and check the status of the flood lights.

### System architecture



### Sharjah Airport High Masts Lighting Control





# **OBSTRUCTION LIGHTS**



### **AIRCRAFT WARNING LIGHT - DELTA BOX FRANCE**













### **SIMPLE VERSION**



### DESCRIPTION

The LEDEOBIA is based on multi-LEDs technology. **Dedicated to a night beaconing**, it is a long life beacon **(100 000 hours)**, **very strong**, **with a low consumption** (<3w). The LEDEOBIA can be **provided with a photocell** for an automatic switch ON / OFF, and a dry contact for failure alarm. The LEDEOBIA can be solar powered for an environmentally friendly system. **It has been designed for an easy installation**.

### **ADVANTAGES**

- ✓ Long life time > 10 years.
- ✓ Multi-LEDs.
- ✓ Low consumption < 3W
- ✓ Delta Box exclusive self-test when the photocell is integrated.

✓ No maintenance.

✓ 5 years warranty





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### **TWINY VERSION - (MASTER/SLAVE)**



### DESCRIPTION

The TWINY is a one block beacon, equipped with exclusive redundant Delta Box system, for a **safety installation** with a daily automatic test. With the LEDs technology, it offers performances in terms of **long life time (100 000 hours)**. The LEDEOBIA TWINY **can be solar power** supplied for supplied for an **environmentally friendly system**, with a low consumption (<3w). The specific design of the box is the most **convenient solution** on the market for installation: mounting frame is a part of the box and the light position could be adjusted in the suitable position.

### ADVANTAGES

- ✓ Long life time > 10 years.✓ Multi-LEDs.
- ✓ Low consumption < 3W
- ✓ Delta Box exclusive self-test.

- ✓ No maintenance.
- ✓ 5 years warranty.
- Zamac box epoxy Powder painting.

#### Direct Current / Alternative Current

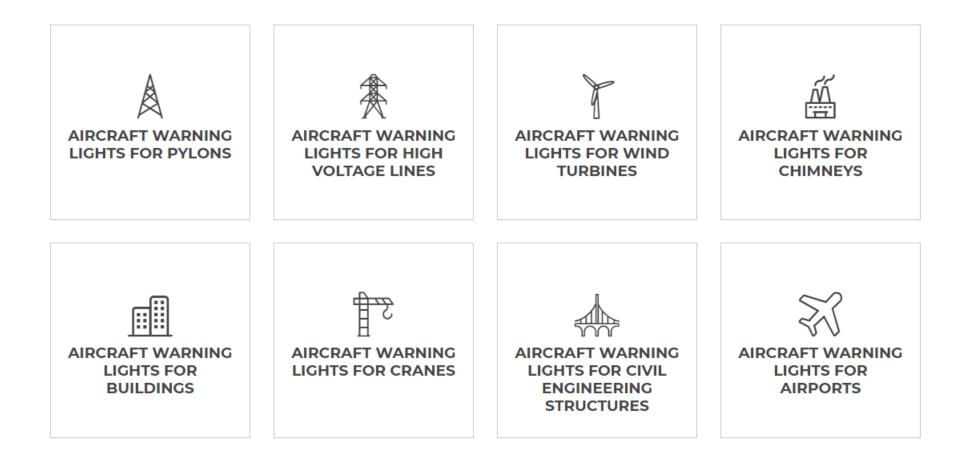






### APPLICATIONS : Rules concerning aircraft beaconing are established by the ICAO (Annex 14, Chapter 6).

Low intensity beacons can be installed on structures **up to 45 meters** in height.







# **OTHER SERVICES**



- We provide installation, supervision and maintenance services for our supplied products.
- We also provide specialized marine painting and coatings for High Masts and Poles on request.



Galvanization 113

After Sand Blasting 108 Microns (- 5)



Primer Coat 253 Microns



Top Coat 451 Microns









# PROJECTS



# **OUR PROJECTS**

### ✓ Dubai Airport

# Container Terminal 4 Jebel Ali (DP World)





✓ Sweihan Air Base

 Supply of 25&30M High Masts, 1000W & 2000W Floodlights and Obstruction Lights

 Supply of 30&40M High Mast and 10, 12 & 14MPoles

Supply of 30M High Masts

 Dubai - Emirates Flight Training Organization at DWC Airfield

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Dubai - Al Maktoum
 International Airport
 Passengers Terminal Expansion



 Dubai – Al Maktoum International Airport AMI/250 Construction Logistics



 Supply of 20M High Masts and 4, 8, & 10M Poles

- Supply of 25M High Masts and Obstruction Lights
- Supply of 20M High Masts,
   8, 10 & 12M Poles,
   3M CCTV Poles, 228W Floodlights and Obstruction Lights



 Dubai International Airport Expansion SP070- Concourse C, B and Terminal 1



Supply of Obstruction Lights

### Zhor Project Egypt



### Supply of High Masts

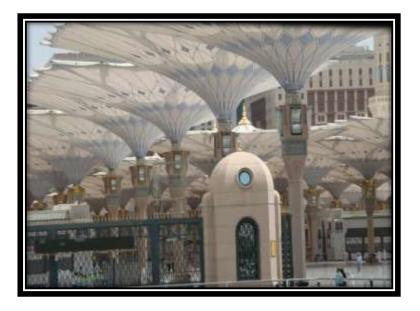
### ✓ Dubai – SP473 Upgrade of Stormwater Drainage



 Supply of 25M High Mast, LED Floodlights and Obstruction Lights

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#### Mekkah Haram Piazza (Saudi Arabia)



Supply of High Masts

#### ✓ Abu Dhabi – Presidential Flight



 Supply and Installation of LED Floodlights

#### ✓ Abu Dhabi – Al Quassera Airbase



Supply of 24&30M High Masts

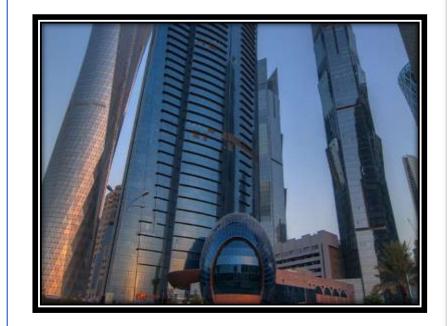


### ✓ Al Ain Airport



✓ Niwaza Grand Mall





Supply of 25M High Masts

Supply of 16M High Masts

 Supply of more than 1000 Units of FCU's

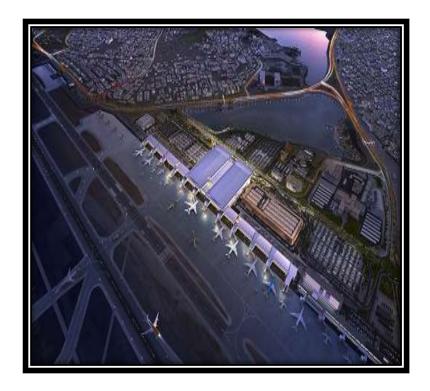


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 Construction of Roads, Infrastructure & Building Works at the Government Bert Area, Port of Duqm



 Supply of 50M High Masts, 6, 16 & 18M Poles, 2000W Floodlights, 150, 250 & 400W Luminaire & Cutout Boxes for Poles ✓ Bahrain International Airport Modernization Program



 Supply of 25M High Masts, 4.5 & 10M Poles and Obstruction Lights



# OTHER PROJECTS

Country	Project	Our Scope
UAE	Abu Dhabi – Presidential Guard Command / Armed Forces	High Masts and Poles
UAE	Ruwais Refinery	Hinged Poles
UAE	Abu Dhabi Airbase	High Masts
UAE	Abu Dhabi – Yahsat Ground Station	Street Lighting Poles
UAE	Abu Dhabi – Eisf Rebar and Wire Rod Mill Project	High Masts
UAE	Al Ain - Jabel Hafeet Project	High Masts
UAE	Al Ain Airport	High Masts
Algeria	Sonatrach Projects	High Masts and Street Lighting Poles
Egypt	Damietta Port	High Masts
Egypt	Cairo Airport (Presidential Area)	High Masts
Egypt	Alexandria	High Masts
Egypt	Refinery Plants	High Masts and Street Lighting Poles
Iraq	Khor Al Zubair Power Generation Plant	Lighting Poles
Jordan	Amman Royal Motorcylce Club	High Masts



Country	Project	Our Scope
Jordan	Forensic Laboratories	Street Lighting Poles
Jordan	King Abdullah II Park – Amman	Lighting Poles and High Masts
Jordan	Aqaba Port	High Masts
Kuwait	Mina Al-Ahmadi Refinery	High Masts and Street Lighting Poles
Oman	Muscat Commercial Center	High Masts and Street Lighting Poles
Oman	Saih Nihayda Plant	Lighting Poles
Palestine	Hebron Roads	Street Lighting Poles
Palestine	Hebron Stadium	High Masts
Palestine	Gaza Border	High Masts
Saudi Arabia	Jubail Saudi Aramco Total Refining and Petrol Chemical Co.	High Masts & Street Lighting Poles
Saudi Arabia	Rabigh and Petrochemical PRJ Naphta And Aromatics	Lighting Poles
UAE	Ruler's Hanger – Sharjah Airport	LED Flood Lights



# Thank you

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