



Reliability is paramount

Midstream. Experts in maritime lighting

 **MIDSTREAM**

MARITIME | AVIATION
SPORTS | HORTICULTURE

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About us and you

We're dedicated to designing and delivering the most highly advanced, efficient, and innovative LED lighting solutions for the world's maritime industry.

These solutions are manufactured to the highest quality standards to provide long-lasting, best-in-class lighting. And our technology is specifically engineered for applications that solve the challenging and complex needs of our maritime clients. Needs like:

- Reducing energy consumption.
- Cutting maintenance costs.
- Providing the safest working environment.
- Securing the facility.
- Minimising environmental impact.
- All whilst vastly improving the quality of their lighting.

That's not all. We're an innovation and knowledge hub that works with designers and architects on lighting design. Our hub is also there to educate and guide you through this technically challenging space.

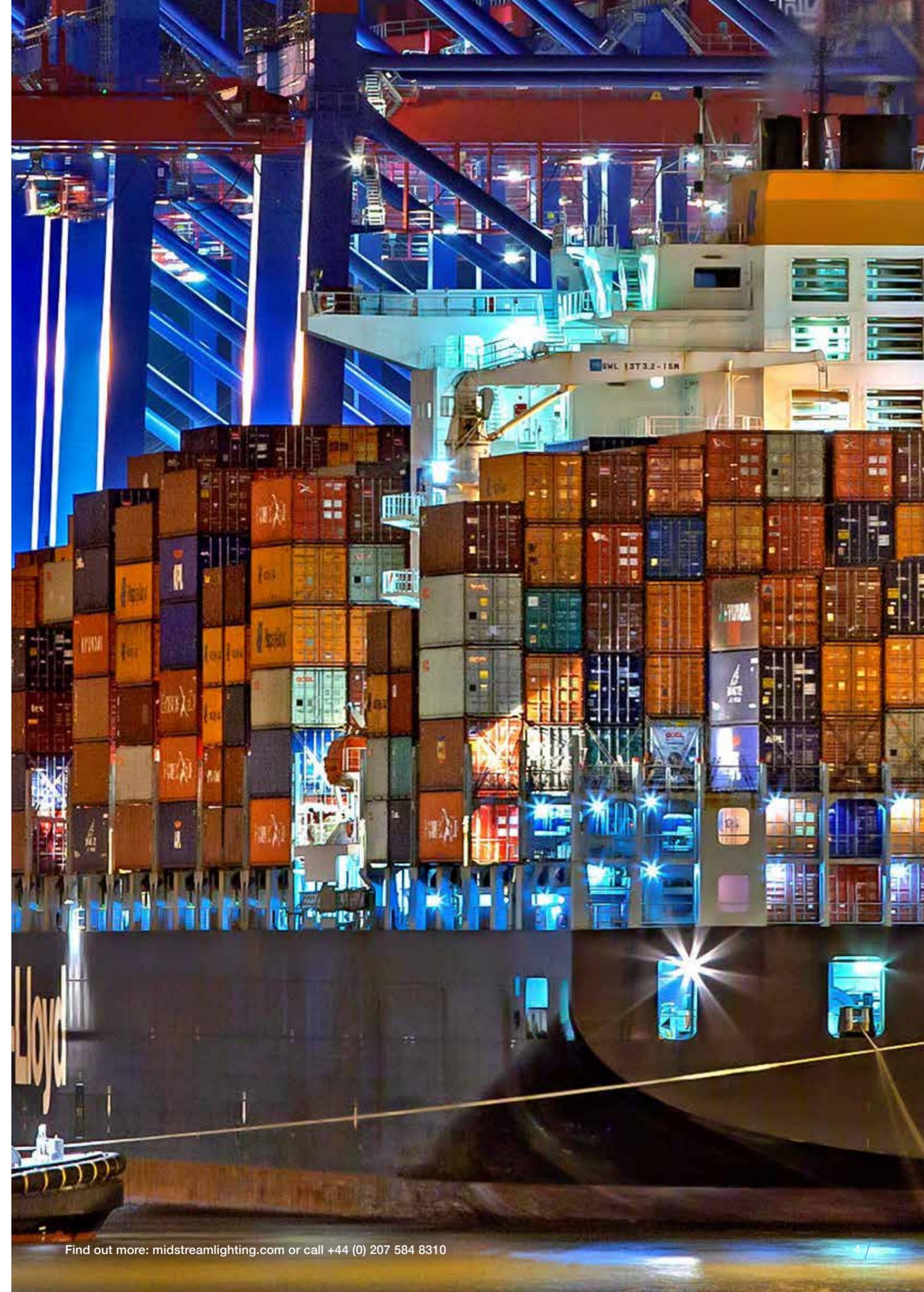
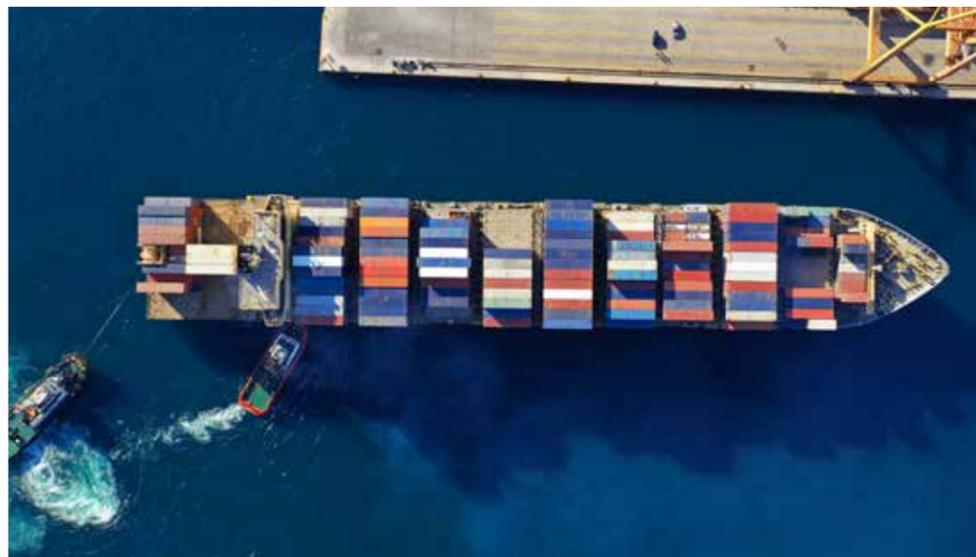
What we'll bring to you

- Our **vast global knowledge, expertise, proven record of success** across the maritime sector, in all locations and climates.
- A **solution and design-driven approach** for both retrofit and greenfield projects.
- We **make continued investment in product development** – to ensure we've got the experience and flexibility to meet your demands.
- A team you can trust. Why? We've designed and **delivered 1,000s of global lighting solutions**. Who else can say that?
- **Exceptional customer support 24/7** whenever and wherever you need it.
- A **network of qualified installers around the world**, to deliver turnkey projects, on time and on budget, with the highest level of workmanship.
- **Quality control and traceability, certification and fast delivery times** thanks to our European manufacturing operation.

Maritime lighting solutions: Ports, terminals and maritime cranes

The right lighting is fundamental to the smooth and safe running of all port and maritime terminals. Whether the application is for an international container port, a local terminal or for maritime crane equipment quality, reliable lighting is critical. Our solutions:

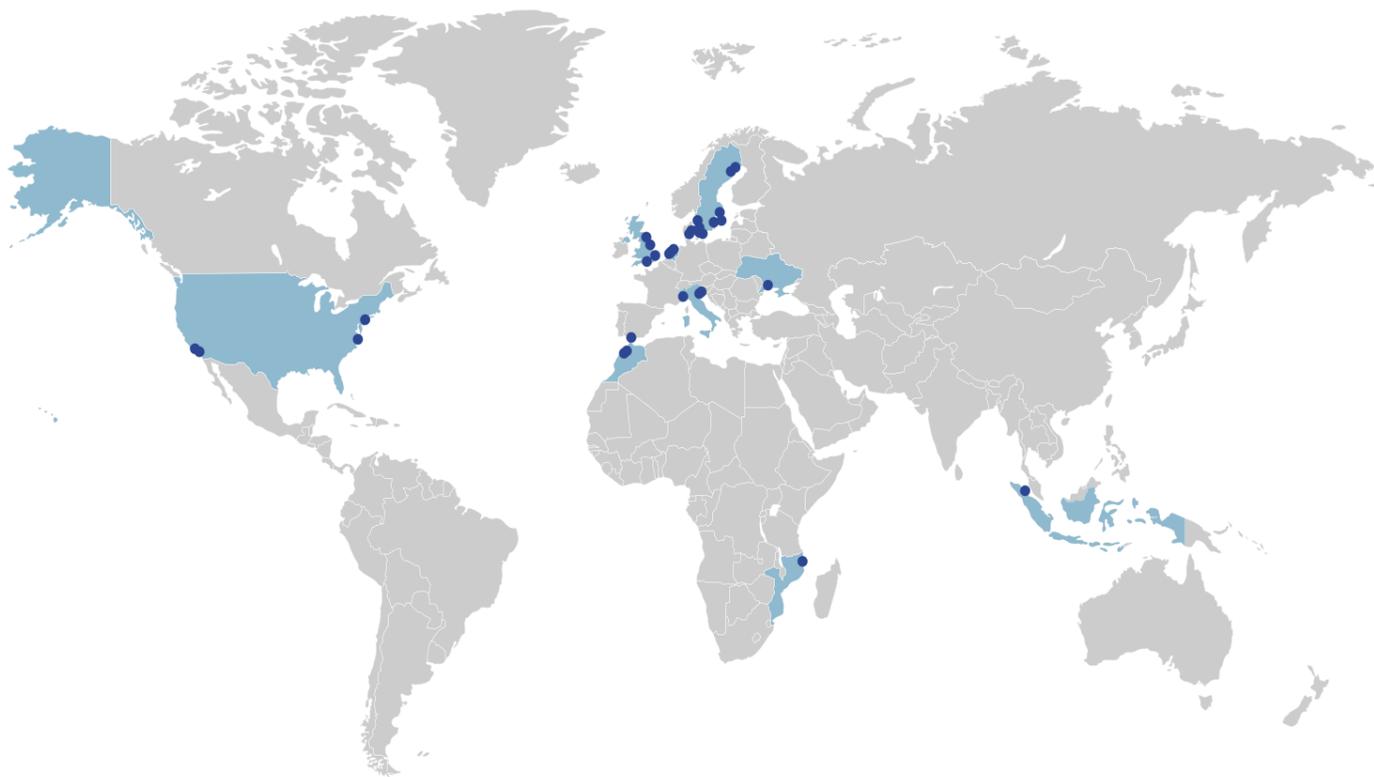
- Are designed to deliver sustainable, energy-saving lighting systems that meet demanding legal, regulatory, and operational requirements.
- Are comprehensive, precise, and fully compliant to all regulations – for ports and terminals around the world.
- Allow maritime crane operators to work efficiently and safely in all areas of the port.
- Focus on quality, reliability, and power use. They also take into account things like:
 - Light distribution versus energy consumption.
 - Light pollution.
 - Size of fittings and accessories.
 - Solution lifetime, and the need for low maintenance.
- Mean land-based personnel can safely find their way around – which is even more vital at night or during poor weather conditions.



The Midstream difference – what we can do for you

For over the last decade, we've transformed the design and manufacture of maritime lighting solutions.

We have global experience in delivering port, terminal and equipment lighting to major ports and terminals, internationally. Working in collaboration with our customers and their stakeholders, we deliver solutions that are trusted worldwide.



Some of our most recent projects include:

Aarhus Port	Denmark	Europe	Port of Felixstowe	United Kingdom	Europe
APMT (Framework Supplier)	Global	Global	Port of Tyne	United Kingdom	Europe
Belawan Terminal	Indonesia	APAC	PNCT, Port of New York	USA	North America
Hupac Terminals	Italy	Europe	Port of Los Angeles	USA	North America
Intermodal Terminal Venice	Italy	Europe	Port of Long Beach	USA	North America
Trieste Intermodal Terminal	Italy	Europe	Port of Virginia	USA	North America
Port of Casablanca	Morocco	Middle East & Africa	PD Ports UK	United Kingdom	Europe
Port of Mohammedia	Morocco	Middle East & Africa	Cairnryan Port	United Kingdom	Europe
Remarail Terminal	Mozambique	Middle East & Africa	Port of Piteå	Sweden	Europe
Lyondell Basell	Netherlands	Europe	Port of Halmstad	Sweden	Europe
Reimerswaal Shipbuilding	Netherlands	Europe	Port of Varberg	Sweden	Europe
Waalhaven Terminal	Netherlands	Europe	Port of Visby	Sweden	Europe
Zenith Terminal	Netherlands	Europe	Port of Oskarshamn	Sweden	Europe
Smålandshamn AB	Sweden	Europe	Port of Ystad	Sweden	Europe
AB Ports (Multiple Sites)	United Kingdom	Europe	Port of Luleå	Sweden	Europe
Port of Yuzhniy	Ukraine	Europe	Port of Oxelösund	Sweden	Europe

Our expertise is unrivalled

Thanks to our expert in-house Lighting Design and Engineering teams, we design and deliver fully compliant, custom-made maritime LED lighting solutions. And we do it on-time, within budget and with a superior level of energy efficiency – anywhere in the world.

Quality and reliability are at the heart of everything we do. So:

- Our products are designed with easy integration and longevity in mind and manufactured to the highest quality – at sites in both the UK and Europe.
- All metal parts are laser cut, bent, and painted on-site. And all finished products undergo end-of-line testing before being packed and shipped.
- We also have full component traceability across all our sites. We operate an audited ISO 9001, 14001, and 45001 Integrated Management System and continually monitor and improve our processes. We're also certified to European Norms Electrical Certification (Europe) and Underwriters Laboratories (USA) requirements. Plus, we've always passed any facility audits by independent certification bodies.

So, you can trust us to:

- Reduce your energy consumption.
- Cut maintenance costs.
- Minimise any environmental impact.
- Meet local or international requirements.
- Handle full turnkey, retrofit, and new build solutions.
- Maintain and provide any project documents you need at any time.
- Advise, consult, plan, design, manage and troubleshoot your lighting system, wherever it is in the world.
- And of course, vastly improve the quality of your lighting to help your operations run safely and smoothly.

No wonder we're the industry's No.1 key global player.

Getting to a solution that works – for you

Unlike other ‘specialist’ lighting companies, we truly deliver full solutions. From day one to the final sign-off of your maritime project and beyond, we can and do take care of everything.

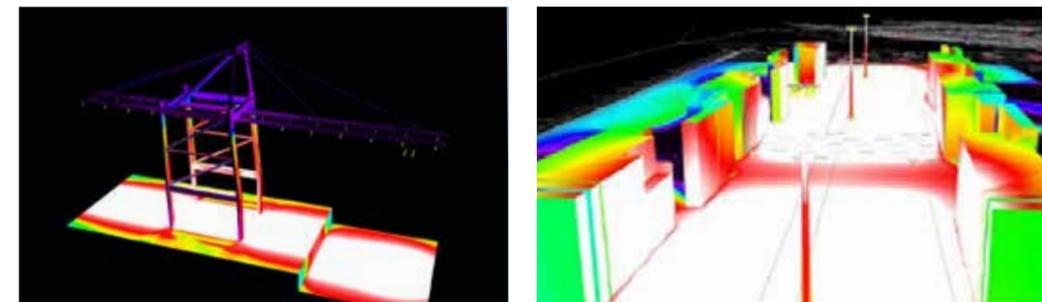
- Lighting for maritime facilities with LED technology needs the right products and level of expertise to deliver results that meet design specifications and regulations. We’ve got those products. And that expertise.
- Our high-power LED lighting products allow us to deliver projects to the most exacting specifications. Whether working to industry regulations, or local governmental requirements, we know and meet what’s needed.
- And our experienced teams have a deep level of knowledge and combined expertise across all manner of high-power lighting solutions. They’re always developing innovative, maritime-specific, high power LED lighting products too.



So, where high standards and efficiency are needed, we deliver a quality solution that gives you more, for less – making us the right choice for your next project.

Lighting design – we get it right first time, every time.

We provide expert lighting design services right from the start of a project – free of charge. Even if your requirements change as the project develops, we will be there to assist and support you.



Installation – no hassle and no wasted time.

To make sure your installation goes smoothly, our expert engineers and supervisors can be with you from start to finish. Our installation teams have years of experience across all our sectors so whatever the installation needs, they’ll be able to support you at every stage.

Maintenance and warranty – protecting your investment.

The great thing about LED lighting is it needs far less maintenance. It’s important though that you protect your investment to maximize the life span and return on investment. This is especially true in the humid environments of the maritime sector. So, our Lighting Warranty lasts for 10 years!

Training and Education – getting your team up to speed.

Our experienced team is on hand to support you. Whether a partner, client, consultant, or engineer, we’ve got your back. We offer a range of training and educational courses to support both our product and sector partners. From technical training on our product range to installation guidance and beyond, we’ll be there for you.

Advising and consulting – let us help you make the right choice.

We’ve got many years of in-depth experience across the maritime sector, and a very experienced management and advisory team. So, we can support, advise, and consult anytime. Whether for a completely new project or to look at existing solutions, just let us know.

Financing – from launch to delivery.

We can provide you with project financing solutions for your lighting projects. Through our approved financing plans we can help you to manage budgetary concerns and hurdles. We can even submit rebate and incentive applications on your behalf, to simplify the process for your project team!

Specialised high-mast lighting for ports and terminals

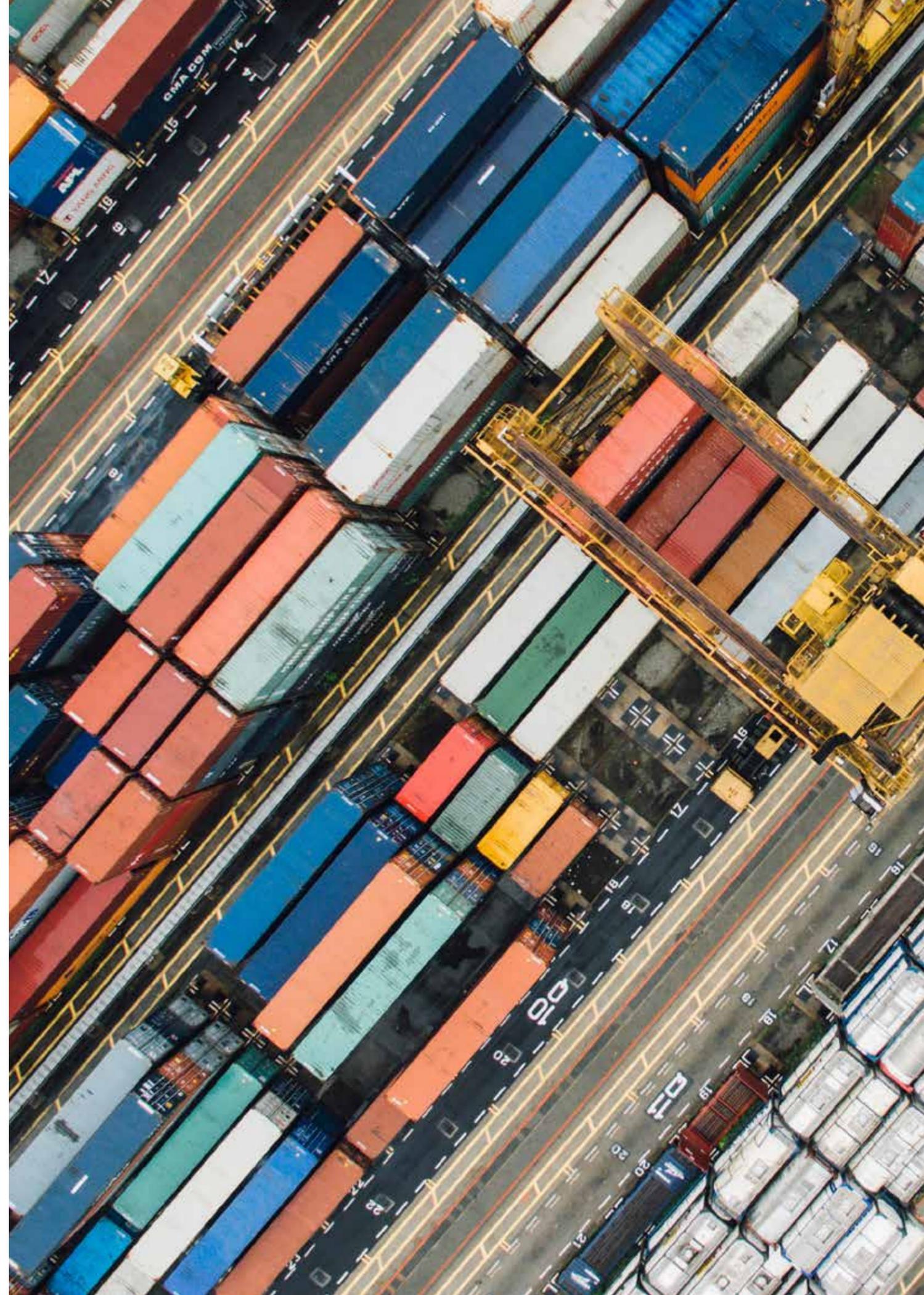
High-mast port and terminal lighting is essential to the safety, security, and smooth operation of all port and terminal operations – whatever their size.

Good quality, reliable illumination helps guarantee successful operations. It also means personnel, traffic, and visitors can find their way around safely and easily – vital at night or during poor weather conditions.

In addition to quality, reliability, and power, port owners are increasingly taking into account:

- Light distribution versus energy consumption.
- Light pollution.
- Size of fittings and accessories.
- Luminaire life, and low maintenance.
- Security benefits of improved lighting.
- Product durability that is trusted and tested.

These are things we've been building our solutions around from our beginning. That's why we're trusted by the world's busiest ports and terminals to design and deliver sustainable lighting systems. Systems that meet demanding legal, regulatory, and operational maritime requirements.



Ports and terminal lighting products

Whatever your need, from a retrofit project to a new build, we've got the perfect lighting solution for you.



The Titan Series

- A highly asymmetric floodlighting system, it provides an excellent solution for low glare applications.
- Its propriety optics deliver maximum light levels on designated areas.
- It's been designed for maximum heat dissipation.
- And it's manufactured to survive the harshest of environments, whilst delivering high performance and long life.



The Atlas Series

- It's both UL certified and DLC listed – for safety and efficiency.
- The proprietary high asymmetry optics provide a low glare solution.
- Thanks to its versatile bracket and adapters, that fit any existing mast infrastructure, it's easy to install and perfect for quick retrofit applications.
- Extremely versatile with floodlight and downlight in one product.
- Robust, stainless steel construction made to survive high saline and high vibration environments



The Modus Series

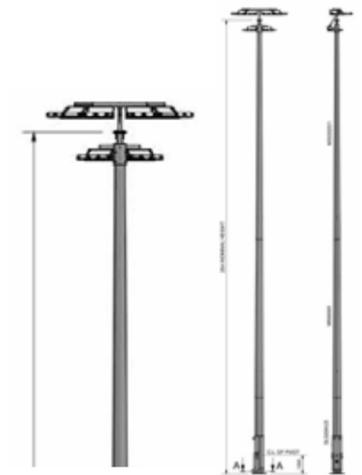
- The cost-effective solution for high power applications.
- It comes available in symmetric and asymmetric distributions.
- The Modus modular design allows for versatile applications and solutions.
- It has integrated drivers for high reliability and easy installation.
- And it provides high colour rendering and comes with full control capability as standard.



High Mast Series

Our extensive range of high masts and columns are expertly designed and manufactured to suit your needs, no matter what location or climate you're in. And the benefits of purchasing the mast and lights at the same time are huge, from reducing risk, increasing speed and getting the perfect lighting solution guaranteed.

With mast heights reaching 50 meters and beyond, we've got the right high mast products to meet your precise requirements.



The Titan Series

Overview

Our flagship line was developed as a high-power solution to provide the performance and reliability required in mission-critical applications.

It's a highly efficient LED floodlight designed specifically for high mast and large area lighting. And it delivers the maximum level of lighting performance possible to a range of environments.

Easily configured and optimised for specific applications, the series has been designed by our in-house Lighting Design and Engineering teams to survive the harshest of conditions. Extremely reliable, it continues to be the go-to product for many of our maritime clients year on year.



The go-to product for our maritime clients for years.



Features and benefits of the Titan Series:

- Its stainless steel construction improves the structural integrity and life of the product – a critical need when used in challenging environments.
- An in-house designed extruded heatsink allows for highly efficient heat dissipation due to its large surface area, when compared with a die-cast product. This keeps lumen degradation to a minimum, extending life and performance.
- The proprietary optic lenses, designed and developed in-house, provide the highest level of asymmetric distribution in the market. This allows clients to reach their required light levels with less power, fewer luminaires, and all with lower glare.
- Its integrated two-step surge protection feature, of up to 15kA/20kV, safeguards the luminaire against power surges – meaning more reliability and longer performance.
- The series is manufactured in the UK to guarantee the highest level of quality control.
- Digital Addressable Lighting Interface (DALI) controls, for plug and play capability, come as standard.
- The Titan's unique bracket and cable retractor design make installation easy – for both retrofit and new build projects.
- Titan's components are individually Ingress Protection (IP66) certified. And the series is certified to European Norms Electrical Certification (ENEC) and Certification Body (CB) requirements.
- Low profile and weight means it easily retrofits on existing masts which typically house HID projectors from the past.
- The Titan Series has been tried and tested in some of the world's biggest and busiest ports.

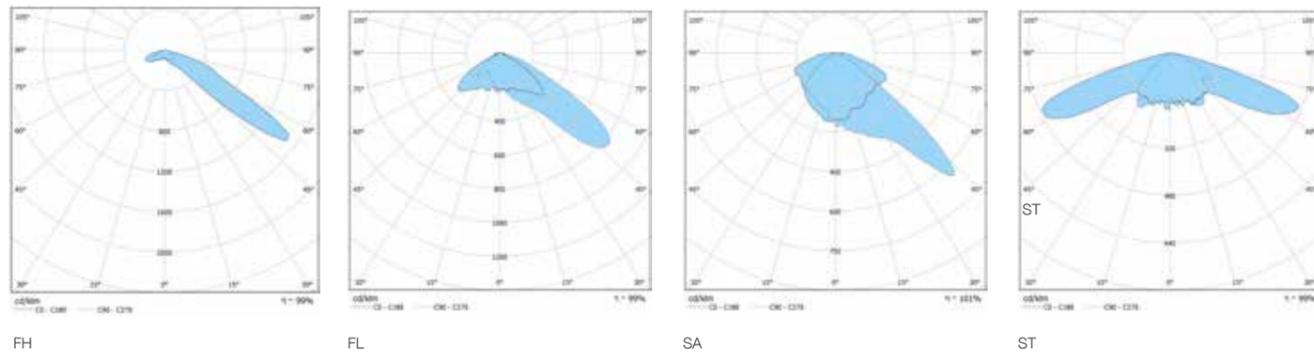
The Titan Series

In detail

Products



Photometrics



Technical specs

	T160	T220	T320	T420	T560	T720
PERFORMANCE						
Luminaire Output	Up to 20.000lm	Up to 26.000lm	Up to 38.000lm	Up to 54.000lm	Up to 67.000lm	Up to 84.000lm
Power Absorption	161w	220w	321w	450w	565w	700w
Lumen Maintenance [L80 B10]	119.000h	119.000h	119.000h	119.000h	77.000h	150.000h
Lumen Maintenance [L70 B50]	190.000h	190.000h	190.000h	190.000h	122.000h	241.000h
OPTOELECTRONICS						
CRI	70 - 80 - 90					
Colour Temperature	3000K Warm White / 4000K Neutral White / 5000K Pure White / 5700K Cool White					
Secondary Optics	Weather proof, Anti-yellowing PMMA refraction matrix					
No of LEDs	36	48	72	96	96	96
LUMINAIRE BODY						
Chassis and Bracket	Stainless Steel					
Metal Finish	Powder Coating					
Heatsinks	Anodized Extruded Aluminium (Copper Content <0.1%)					
Bracket	Angled Reversible bracket, M20 or 2 x M14 Fixing points					
Weight	12.5 kg	13.5 kg	20 kg	24 kg	25 kg	32 kg
Dimensions (L-W-H)	389 - 340 - 145 mm	445 - 340 - 145 mm	446 - 515 - 145 mm	502 - 515 - 145 mm	502 - 515 - 145 mm	727 - 515 - 155 mm
Protection Level	IP66	IP66	IP66	IP66	IP66	IP66
Impact Resistance	IK09	IK09	IK09	IK09	IK09	IK09
Windage EPA	0.059 m ²	0.065 m ²	0.088 m ²	0.088 m ²	0.088 m ²	0.102 m ²
ELECTRONICS						
Voltage input	90-305 VAC 50-60Hz					
Active Power F.C.	0.95					
Surge Protection	15kA, IEEE C62.41.2 Location Category C High					
Insulation Class	IEC Class I					
Short Circuit Protection	Auto-recovery					
Over Heat Protection	Drops output current					
OPERATING CONDITIONS						
Working Temperature	-40°C / +50°C					
Humidity Range	0% - 94%					

Ordering codes

PRODUCT FAMILY	POWER	OPTIC	CCT	BODY MATERIAL	CONTROL SYSTEM	BODY COLOUR	OPTIONAL
T (Titan)	16	FH	A (5000k)	T (AISI 3CR12 Stainless Steel)	10 (0-10v)	T (Black and White)	00
	22	FL	B (4000k)	M (AISI 316 Stainless Steel)	DA (DALI)	H (High Heat White)	02 (Integrated SPD)
	32	SA	C (3000K)				
	42	ST	D (5700k)				
	56						
	72						

The product family can be tailored to the specifications outlined above. Example ordering code: T-72-FH-A-T-10-T-02

The Modus Series

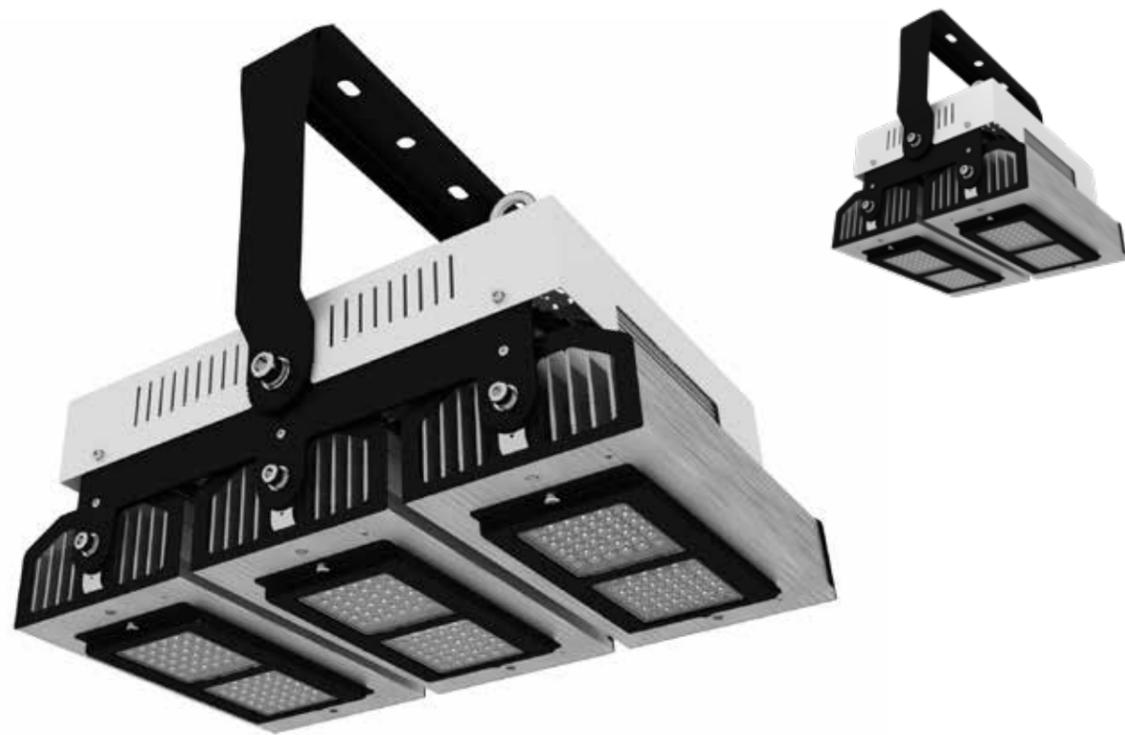
Overview

Our Modus Series was developed to provide a solution for environments that need to replace 2kW Metal Halide projectors with high lumen, long-life, and low maintenance products.

The modular design of the Modus Series allows for a versatile approach to lighting design, enabling new ways to combine different power products in the same location.

Meanwhile, the extruded aluminium heatsink and stainless steel construction allow this range to be used in harsh environmental conditions.

The single 150w module with either asymmetric or symmetric optic can be used as an adaptable floodlight solution for wide-ranging simple and complex applications. Whereas the Modus 900 with 990w LED power and narrow optics can provide an excellent solution for high-lux applications.



Modular design allowing for versatile and tailored applications and solutions.



Features and benefits of the Modus Series:

- Its stainless steel construction improves the structural integrity and life of the product – a critical need when used in challenging environments.
- The modular design makes it perfect for versatile and tailored applications and solutions.
- Its high lumen package delivers over 117,000 lumens, enough to meet the highest requirements and standards.
- Modus has been designed to have either asymmetric or symmetric distribution, making it a flexible solution that can be used in a wide range of applications.
- An in-house designed extruded heatsink allows for highly efficient heat dissipation due to its large surface area, when compared with a die-cast product. This keeps lumen degradation to a minimum, extending life and performance.
- Its integrated two-step surge protection feature, of up to 15kA/20kV, safeguards the luminaire against power surges – meaning more reliability and longer performance.
- And the DALI controls, for plug and play capability, come as standard.

The Modus Series

In detail

Products



Modus 150



Modus 300

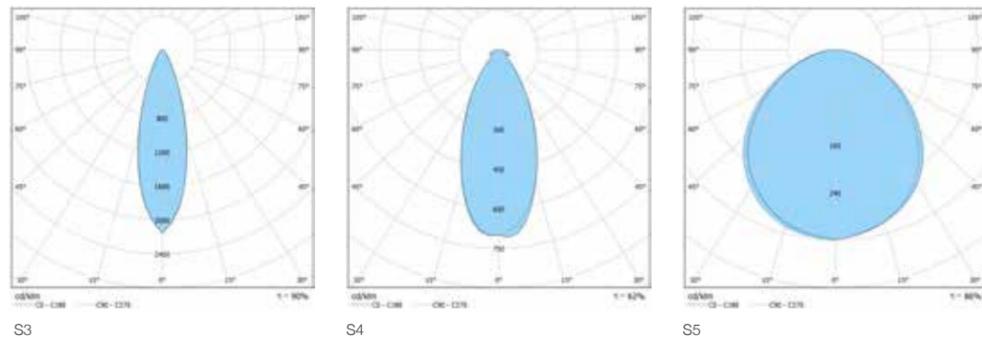
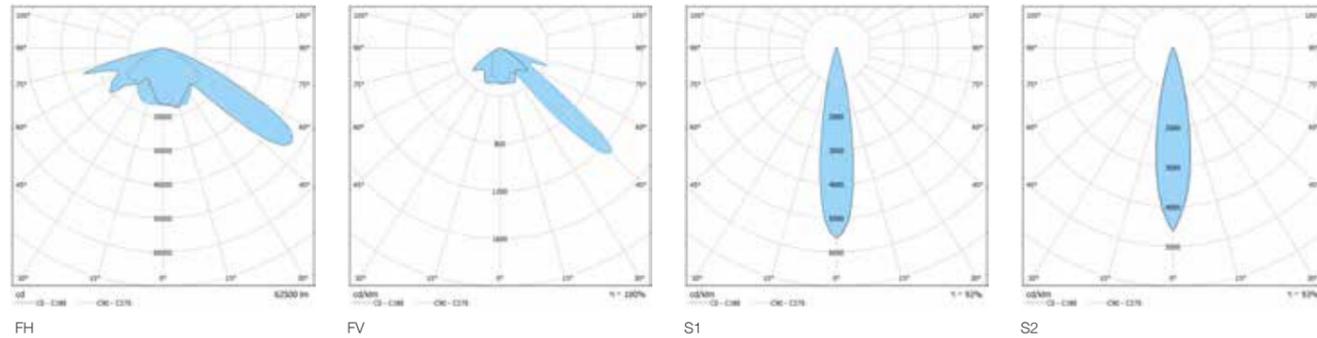


Modus 600



Modus 900

Photometrics



Technical specs

	M150	M300	M600	M900
PERFORMANCE				
Luminaire Output	Up to 16.000lm	Up to 39.000lm	Up to 78.000lm	Up to 117.000lm
Power Absorption	145w	330w	660w	990w
Lumen Maintenance [L80 B10]	119.000h	119.000h	119.000h	119.000h
Lumen Maintenance [L70 B50]	190.000h	190.000h	190.000h	190.000h
OPTOELECTRONICS				
CRI	70 - 80 - 90			
Colour Temperature	3000K Warm White / 4000K Neutral White / 5000K Pure White / 5700K Cool White			
Secondary Optics	Weather proof, Anti-yellowing PMMA refraction matrix			
No of LEDs	32	72	144	216
LUMINAIRE BODY				
Chassis and Bracket	Stainless Steel			
Metal Finish	Powder Coating			
Heatsinks	Anodized Extruded Aluminium (Copper Content <0.1%)			
Bracket	Angled Reversible bracket, M20 or 2 x M14 Fixing points			
Weight	6.5 kg	10.5 kg	23 kg	36 kg
Dimensions (L-W-H)	201 - 255 - 170 mm	201 - 373 - 224 mm	416 - 393 - 269 mm	631 - 393 - 278 mm
Protection Level	IP67	IP67	IP67	IP67
Impact Resistance	IK09	IK09	IK09	IK09
Windage EPA	0.05 m ²	0.094 m ²	0.187 m ²	0.280 m ²
ELECTRONICS				
Voltage input	90-305 VAC 50-60Hz			
Active Power F.C.	0.95			
Surge Protection	15kA, IEEE C62.41.2 Location Category C High			
Insulation Class	IEC Class I			
Short Circuit Protection	Auto-recovery			
Over Heat Protection	Drops output current			
OPERATING CONDITIONS				
Working Temperature	-40°C / +55°C			
Humidity Range	0% - 94%			

Ordering codes

FAMILY	POWER	OPTIC	CCT	CRI	VOLTAGE INPUT	CONTROL SYSTEM	BODY MATERIAL	BRACKET	OPTIONAL	VISOR
M (Modus)	01	FH	A (5000k)	70	EU (100-277 VAC)	10 (0-10v)	T (AISI 3CR12 Stainless Steel)	C (Angled Bracket)	00	Sx (Visor for S Optics)
	03	FV	B (4000k)	80		DA (DALI)	M (AISI 316 Stainless Steel)	T (Straight Bracket)		Fx (Visor for F Optics)
	06	S1	C (3000K)	90				P (Pole Clamping)		00 (No Visor)
	09	S2	D (5700k)							
		S3								
		S4								
		S5								

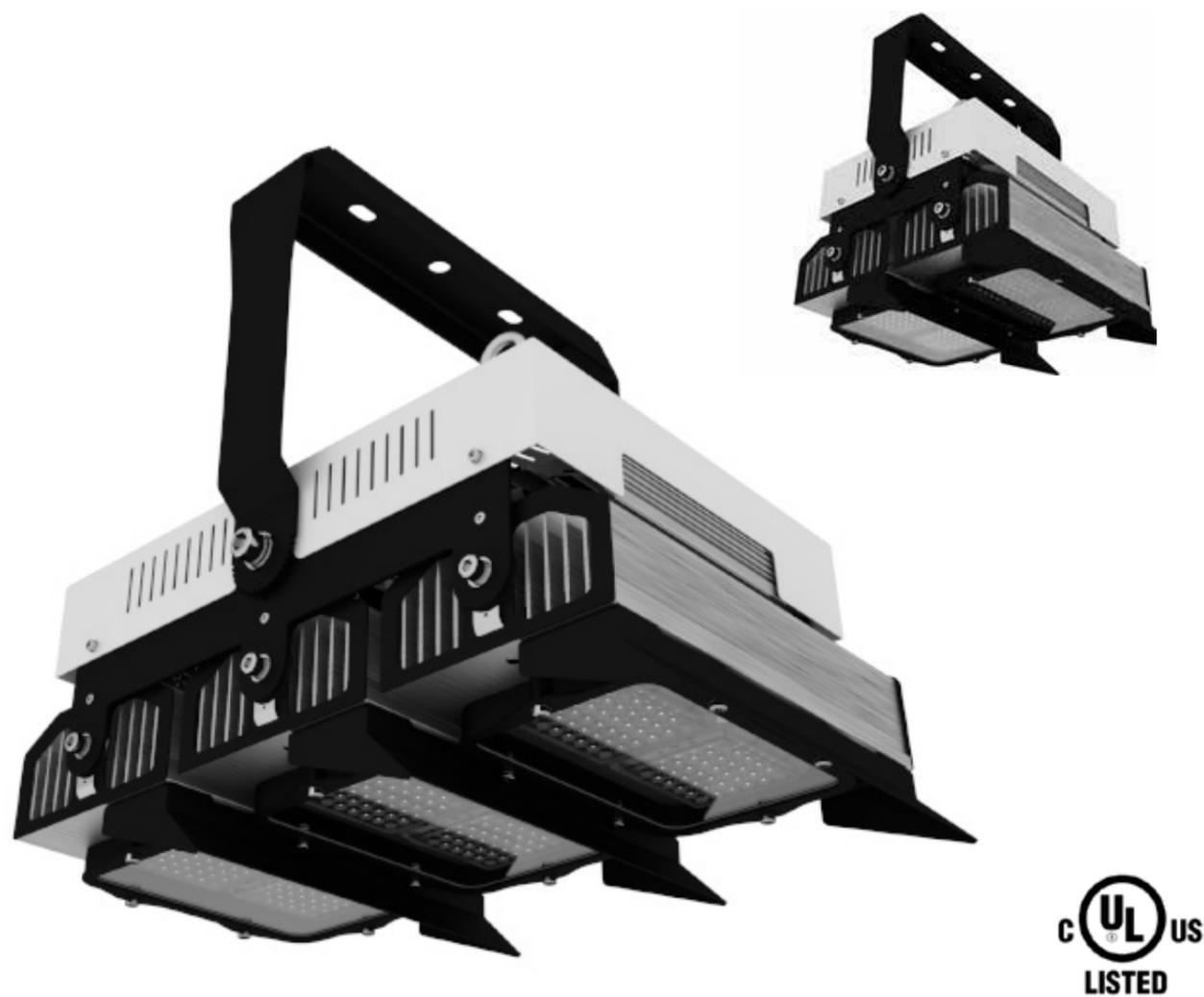
The product family can be tailored to the specifications outlined above. Example ordering code: M-01-S3-A-70-EU-DA-T-C-02-Sx

The Atlas Series

Overview

The Atlas Series is constructed with an extruded aluminium heatsink and stainless steel housing, providing protection in the harshest conditions including high temperatures and saline environments.

The series is available with symmetric optics for multi-spot environments and highly asymmetric for low glare environments.



UL listed for safety and
DLC certified efficient



Features and benefits of the Atlas Series

- The series is UL certified and DLC listed – for safety and efficiency.
- The proprietary optic lenses, designed and developed in-house, provide the highest level of asymmetric distribution in the market. This allows clients to reach their required light levels with less power, fewer luminaires, and all with lower glare.
- Atlas has been designed to have either asymmetric or symmetric distribution, making it a flexible solution that can be used in a wide range of applications.
- Its stainless steel construction improves the structural integrity and life of the product – a critical need when used in challenging environments.
- The modular design makes it perfect for versatile and tailored applications and solutions.
- Its high lumen package delivers over 120,000 lumens, enough to meet the highest requirements and standards.
- An in-house designed extruded heatsink allows for highly efficient heat dissipation due to its large surface area, when compared with a die-cast product. This keeps lumen degradation to a minimum, extending life and performance.
- Its integrated two-step surge protection feature, of up to 15kA/20kV, safeguards the luminaire against power surges – meaning more reliability and longer performance.
- The versatile bracket and adapters fit any existing masts, making it easy to install and perfect quick retrofit applications.
- DALI controls, for plug and play capability, come as standard.
- The series components are individually Ingress Protection (IP67) certified.
- The series offers an easy one versus one replacement retrofit solution for HID floodlights.
- It also has integrated drivers for high reliability and easy installation.
- The Atlas Series is manufactured in Europe and also stocked in the USA, for fast deliveries.

The Atlas Series

In detail

Products



Atlas 300

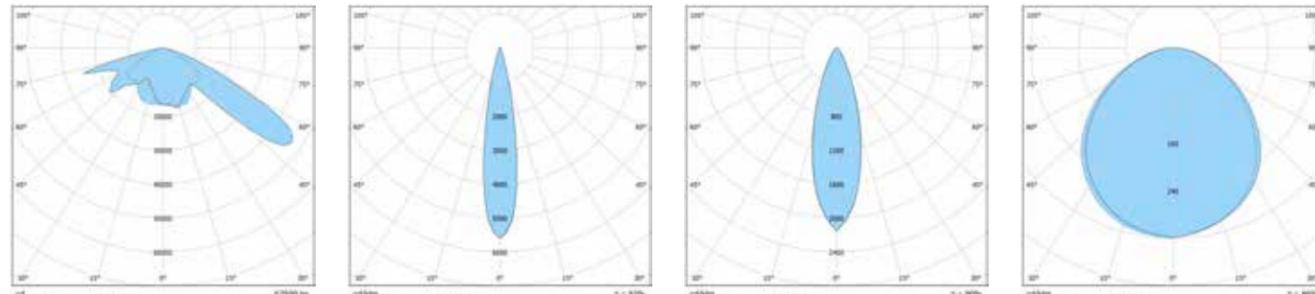


Atlas 600



Atlas 900

Photometrics



FH S1 S3 S5

Technical specs

	A300	A600	A900
PERFORMANCE			
Luminaire Output	Up to 40.000lm	Up to 80.000lm	Up to 120.000lm
Power Absorption	330w	660w	990w
Lumen Maintenance [L80 B10]	119.000h	119.000h	119.000h
Lumen Maintenance [L70 B50]	190.000h	190.000h	190.000h
OPTOELECTRONICS			
CRI	70 - 80 - 90		
Colour Temperature	3000K Warm White / 4000K Neutral White / 5000K Pure White / 5700K Cool White		
Secondary Optic	Weather proof, Anti-yellowing PMMA refraction matrix		
Protective Screen	4mm Tempered Glass		
No of LEDs	72	144	216
LUMINAIRE BODY			
Chassis and Bracket	Stainless Steel		
Metal Finish	Powder Coating		
Heatsinks	Anodized Extruded Aluminium (Copper Content <0.1%)		
Bracket	Yoke Bracket (Central Bolt 1-3/4) / Tenon Bracket (Clamping 2in Pipe) Mount		
Weight	25.5 lb	61.5lb	93 lb
Dimensions (L-W-H)	7.9 - 14.7 - 9.3 in	16.4 - 15.5 - 11 in	24.9 - 15.5 - 11.4 in
Protection Level	IP67 - UL1598 Suitable for Wet Locations	IP67 - UL1598 Suitable for Wet Locations	IP67 - UL1598 Suitable for Wet Locations
Impact Resistance	IK10	IK10	IK10
Windage EPA	1.02 ft²	2.02 ft²	3.02 ft²
ELECTRONICS			
Voltage input	277-480 VAC 50-60Hz		
Active Power F.C.	0.95		
Surge Protection	20kA, ANSI C136.2-2015 : Extreme Level		
Insulation Class	IEC Class I		
Short Circuit Protection	Auto-recovery		
Over Heat Protection	Drops output current		
OPERATING CONDITIONS			
Working Temperature	-40°F up to +130°F		
Humidity Range	0% - 98%		

Ordering codes

FAMILY	POWER	OPTIC	CCT	CRI	VOLTAGE INPUT	CONTROL SYSTEM	BODY MATERIAL	BRACKET	OPTIONAL	VISOR
A (Atlas)	03	FH (Type IV)	A (5000k)	70	US (277-480 VAC)	10 (0-10v)	T (AISI 3CR12 Stainless Steel)	C (Angled Bracket)	00	Sx (Visor for S Optics)
	06	S1 (NEMA 1)	B (4000k)	80		DA (DALI)	M (AISI 316 Stainless Steel)	T (Straight Bracket)		Fx (Visor for F Optics)
	09	S2 (NEMA 2)	C (3000K)	90		CW (Synapse Wireless)		P (Pole Clamping)		00 (No Visor)
		S3 (NEMA 3)	D (5700k)							
		S4 (NEMA 4)								
		S5 (NEMA 6)								

The product family can be tailored to the specifications outlined above. Example ordering code: A-03-S1-A-70-US-10-T-C-00-00

High Mast Product Series

Minimum maintenance guaranteed Base hinged masts

If you're looking to keep maintenance to an absolute minimum, our base hinged masts help you achieve exactly that – thanks to their sturdy design and durable engineering. They're available with hinges, either at the bottom or middle. And, as long as there's sufficient ground clearance, they allow easy ground access to the lighting whenever you need.

Features and benefits of base hinged masts:

- They're super-simple to install and set up and are virtually maintenance-free.
- Compared to some other mast solutions, fitting them takes far less time – up to three times less in some cases.
- Mast height available up to 50m.
- If any maintenance is needed it can be done safely, quickly, and easily on the ground – reducing a lot of health and safety requirements.
- The platform free design gives them a sleek, modern look.
- Also, because no platform is needed wind load pressures and the foundations needed can be kept to a minimum.
- Their operating systems and protective equipment can be housed in the mast or its cabinet.
- They're incredibly stable and can also be quickly lowered to cope with high winds and stormy weather.



Tried, tested and low maintenance Fixed masts

Where a large area lighting is needed, our fixed masts are perfect for housing the significant number of LED lights required e.g. in sporting venues. As they're fixed, they offer maximum stability. And if any maintenance is needed standard high-level equipment is available to make access to the lights trouble-free. They can be supplied with a ladder and safety cage too, so if you will need regular access, this is a winning choice.

Features and benefits of fixed masts:

- With thousands of fixed masts already installed worldwide, the process of fitting them has been tried, tested, and is trouble-free.
- As with base hinged masts, wind load pressures and the foundations needed can be kept to a minimum.
- Because they have no moving parts, the masts hardly need any maintenance at all.
- Maintaining the masts luminaires themselves is made simple thanks to easy to operate high access equipment.



Example of a lowering headframe mast

For when space counts Lowering headframe masts

If space is at a premium, lowering headframe masts mean the headframe can be easily winch-lowered to the ground if any maintenance is needed.

Features and benefits of lowering headframe masts:

- As there's no need for ground clearance, lowering headframe masts are perfect for where space is limited.
- Maintenance is made easy as the headframe can be simply lowered to the ground. So, there's no need to use any equipment to access the lighting.
- To provide additional strength and more security headframe latching is available if required.
- Unlike multi-cable solutions, lowering headframe masts operate with a single multi-core electrical cable management system for all the floodlights.
- This can be with a winch and cable system or an external guide rail system
- All masts can be in-built with individual lowering motors, for fast action.

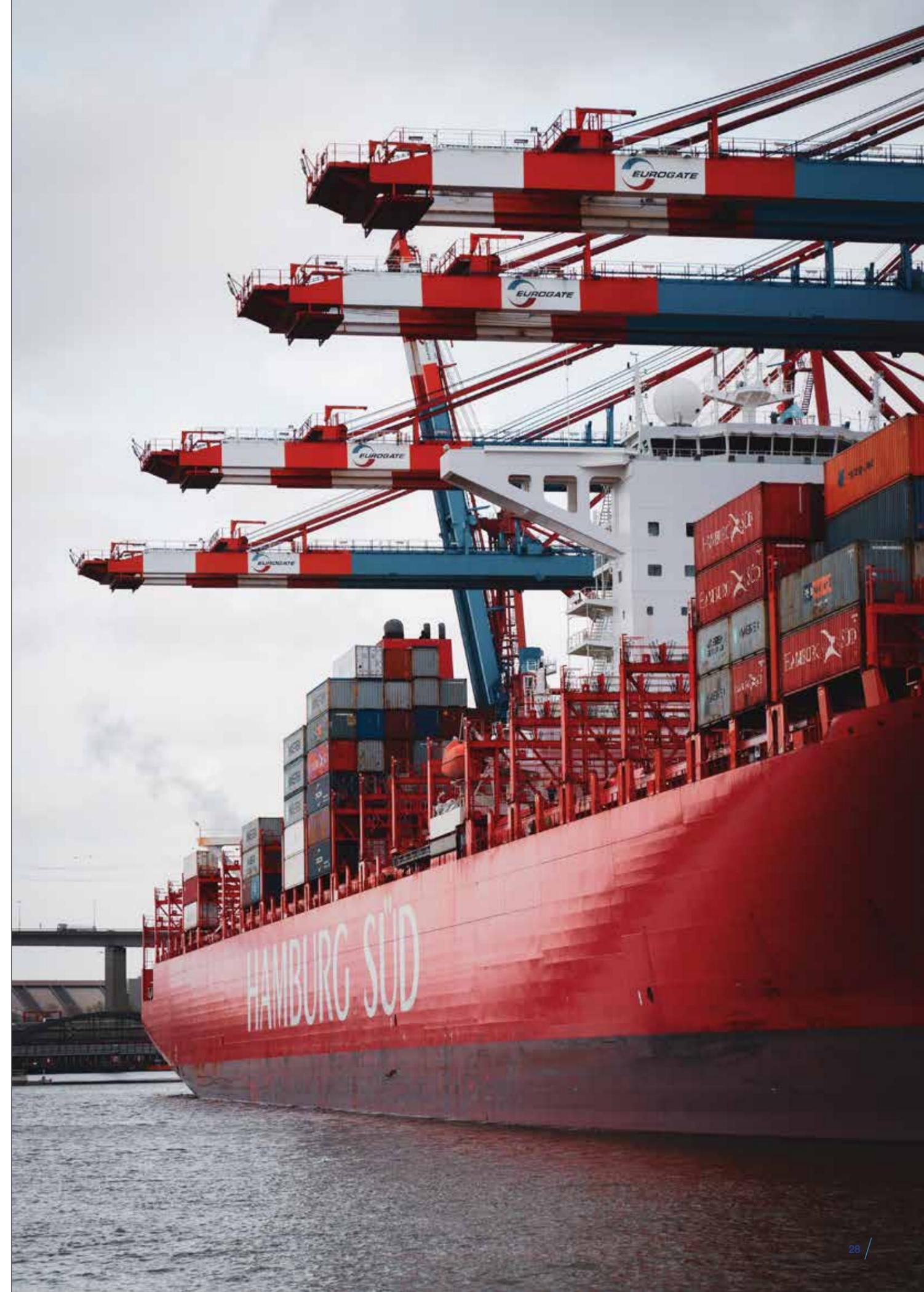
Specific solutions designed for you Bespoke masts

In some rare cases, an 'off-the-shelf' product can't rise to meet all the precise needs for a project. That's where the expertise and experience of our Design and Engineering teams comes into play. They can work with you to develop a bespoke mast solution that meets your project needs – exactly.

Maritime crane lighting

Designing lighting solutions for mobile equipment requires a very specific knowledge of LED lighting – knowledge we have above all others.

And the finished product needs to be 100% fit for their environment, our solution is perfect for applications that include RTG Cranes, STS Cranes and Mobile Harbour Cranes as well as many other terminal equipment requirements.



Maritime crane lighting products

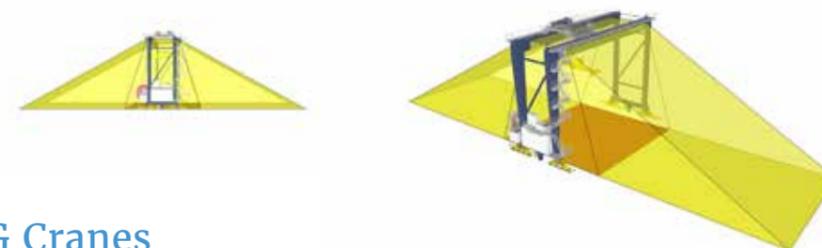
Whatever your need, from a retrofit project to a completely new one, we've got the perfect lighting solution for you.

The Docker Series

The highest performance and durability

The Midstream Docker series, built for maritime crane equipment is a heavy-duty LED floodlight system, manufactured to resist the harshest environments, and for applications needing high-performance and durability. Due to vibrations and harsh weather conditions, much higher requirements are imposed on crane lighting than on lighting in ports and terminals. Our crane lighting solutions provide:

- Maximum visibility for increased safety and productivity
- Proven durability and reliability via 316-grade stainless steel as well as being tested for salt spray & vibrations up to 6G
- Increased energy savings for operational and environmental benefits
- High cost savings via low maintenance & installation requirements
- Tailormade solutions with our wide range of optics



RTG Cranes

Maximise visibility, increase productivity

A wide range of optics makes this the perfect luminaire solution for any size of container stacker cranes. Midstream's proprietary asymmetric optic 'FH' guarantees a wide coverage along the crane path plus high vertical illuminance for improved obstacle recognition and maximum safety of stack areas. This asymmetric emission allows light to cover an area x 4 larger than traditional symmetric optics, without the need for additional front facing floodlights – resulting in a glare-free installation.



STS Cranes

A new standard in safety

Midstream can provide bespoke lighting layouts for each type of crane, using the optimum optic to lower glare, increase uniformity and avoid any dark spots on the ground. The asymmetric optic emission provide first-class vertical light levels, to ensure the operator always has excellent visibility of the container on all sides.



Mobile Harbor Cranes

Built to last

A sturdy stainless steel chassis surrounding the optic resists continuous vibrations. Fixing brackets are designed with 4-point locking mechanisms, to ensure the aiming precision of the light beam. Superior optical performances ensure safe illuminance levels surrounding the crane, while symmetrical optical beams highlight the cargo handling area.

The Docker Series is our mobile lighting solution. It's been designed for applications needing high-performance and durability – making it perfect for crane and harbour lighting.

The Docker Series

Overview

Heavy Duty LED floodlight designed for applications requiring high performance and high durability. Full AISI 316 Stainless Steel body built to resist the harshest environments. Docker Series floodlights ensure maintenance free operation for mission critical applications.

Applications

- Maritime
- RTG Cranes
- STS Cranes
- RMG Cranes
- Bulk Handling Cranes
- Construction sites
- Mining operations
- Military applications
- Mobile Equipment



Manufactured with 316 stainless steel to resist corrosion in harsh, saline environments.



Features and benefits of the Docker Series:

- Heavy Duty LED floodlights built to resist the harshest environments and for applications needing high performance and high durability.
- A low weight design and compact size allows for an easy to install solution.
- Designed with a wide range of optics to provide a solution that maximises safety across all areas and allows for the provision of a tailor-made lighting layout for your environment, using the optimum choice of optics to reduce glare, increase uniformity and avoid any dark spots on the ground.
- Manufactured with Midstreams proprietary Asymmetric optic that guarantees a wide coverage of luminance levels for improved obstacle recognition and the light emission allows light to cover an area four times larger than currently achievable with traditional symmetric optics, removing the need for additional front-facing floodlights for example on cranes, resulting in a low glare installation.
- Manufactured with 316 stainless steel to resist corrosion in harsh, saline environments.
- Certified IP 67 for highest level of ingress protection
- Tested on STS & RTG Cranes.
- 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.
- UL certified and DLC listed (US Version)

The Docker Series

In detail

Products

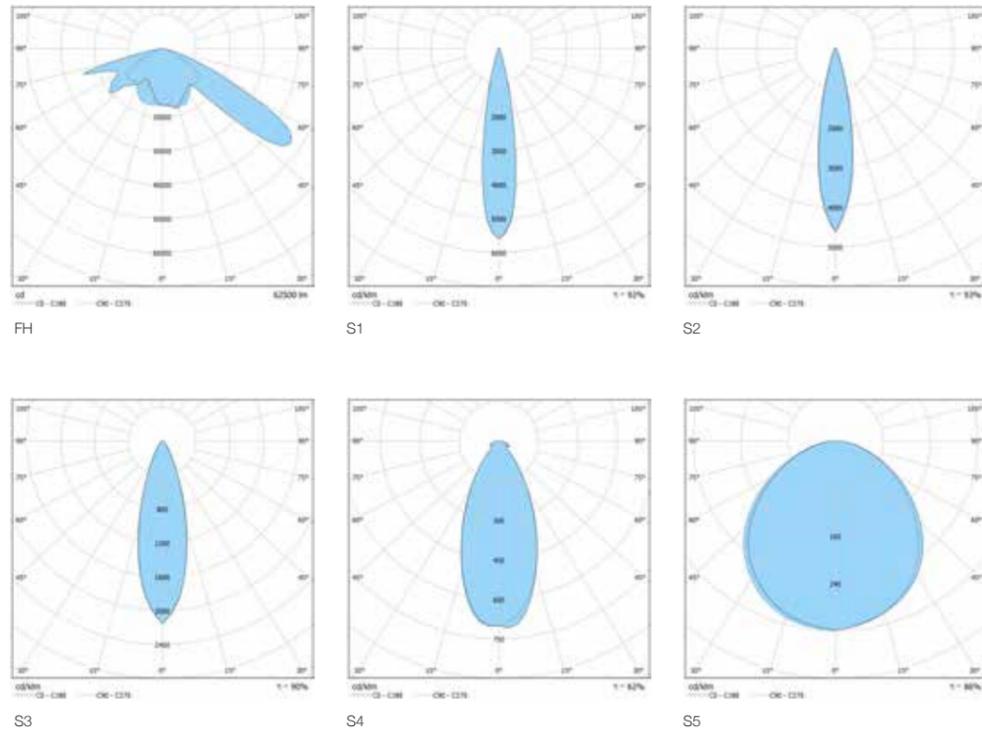


Docker 150



Docker 300

Photometrics



Technical specs

	150 (EU)	300 (EU)	150 (US)	300 (US)
PERFORMANCE				
Luminaire Output	Up to 17.500lm	Up to 35.000lm	Up to 17.500lm	Up to 35.000lm
Power Absorption	145w	300w	160w	330w
Lumen Maintenance [L80 B10]	119.000h	119.000h	119.000h	119.000h
Lumen Maintenance [L70 B50]	190.000h	190.000h	190.000h	190.000h
OPTOELECTRONICS				
CRI	70 - 80 - 90			
Colour Temperature	3000K Warm White / 4000K Neutral White / 5000K Pure White / 5700K Cool White			
Secondary Optics	Weather proof, Anti-yellowing PMMA refraction matrix			
No of LEDs	32	72	72	72
Protective Screen	N/A	N/A	4mm Tempered Glass	4mm Tempered Glass
LUMINAIRE BODY				
Chassis and Bracket	AISI 316 Stainless Steel			
Metal Finish	Powder Coating			
Heatsinks	Anodized Extruded Aluminium (Copper Content <0.1%)			
Bracket	Customizable AISI 316			
Weight	8 Kg	11.5 Kg		28 lb
Dimensions (L-W-H)	201 - 255 - 196 in	201 - 376 - 202 in		7.9 - 14.8 - 8.4 in
Protection Level	IP67	IP67		IP67 - UL1598 Suitable for Wet Locations
Impact Resistance	IK09	IK09		IK10
VIBRATIONS RESISTANCE				
ANSI C136.31-2010	Up to 6G for 100.000 cycles			
CORROSION RESISTANCE				
UL 1598A:2000	Salt Spray ASTM B117 for 1000 hours with 5% salinity			
ELECTRONICS				
Voltage input	100 - 305 VAC 50-60Hz		277 - 480 VAC 50-60Hz	
Active Power F.C.	0.97		0.97	
Surge Protection	10kV line-earth, 6kV line-line		10kV line-earth, 6kV line-line	
Insulation Class	IEC Class I		IEC Class I	
Short Circuit Protection	Auto-recovery		Auto-recovery	
Over Heat Protection	Drops output current		Drops output current	
OPERATING CONDITIONS				
Working Temperature	-40°C / +50°C		-40°F / + 130°F	
Humidity Range	0% - 94%		0% - 98%	

Ordering codes

FAMILY	POWER	OPTIC	CCT	CRI	VOLTAGE INPUT	CONTROL SYSTEM	BODY TYPE	BRACKET	OPTIONAL
D (Docker)	15	FH	A (5000k)	70	EU (100-277 VAC)	10 (0-10v)	M (AISI 316 SS)	A (Type A)	00
	30	S1	B (4000k)	80	US (277-480 VAC)			B (Type B)	
		S2	C (3000K)	90					
		S3	D (5700k)						
		S4							
		S5							

The product family can be tailored to the specifications outlined above. Example ordering code: D-30-FH-A-70-US-10-M-A-00

Find out more: midstreamlighting.com or call +44 (0) 207 584 8310



CASE STUDY

Port of Long Beach (USA)

Established in 1991, TTI is a full-service marine terminal and stevedore operator. It's part of Terminal Investments Limited, which in turn is owned by the Mediterranean Shipping Company (MSC). TTI has ownership interests in over 37 terminals worldwide – including Pier T at the Port of Long Beach.

Their Pier T operation was designed for maximum efficiency and productivity. It has the capacity to process more than 3,000,000 Twenty-foot Equivalent Unit (TEU) vessels a year. It's also outfitted with some of the world's largest gantry cranes and the biggest cranes at any USA port.

The challenge

TTI needed to:

- Replace the 1,400 high mast 1,000W metal halide lighting fixtures to cut energy, operational, and maintenance costs.
- Keep the number of luminaires exactly the same as before.

Customer: TTI Total Terminals International

Location: Pier T, Port of Long Beach, USA

Max Capacity: 3 million TEU per year

Project date: 2018

LED floodlights installed: 1,400

Type: Atlas Series – 300/600

Energy Savings: 60%

Lux average values: 35 Lux (3 f.c)

Payback: 1 year – including project rebate

This was a complex challenge as it also involved the winner of the tender:

- Commissioning and installing the lighting system.
- Making the necessary rebate applications by the end of the year.
- Delivering Underwriters Laboratories (UL) compliant lighting.
- Getting a Port Permit from the Port of Long Beach – a long and complicated process.

Our solution

This is when our very successful and versatile Atlas Series was born – with design to prototype to UL certification taking less than two months.

- The made for purpose 330W and 660W Atlas lighting fixtures were designed to be robust enough to cope with the hostile conditions, and be highly efficient at the same time
- By combining them on one pole, they were able to deliver the require illumination at the lowest possible energy consumption – around 500W on average
- And once installed, the increase in the colour rendering of the light achieved increased the visibility of any hazards and made the port a much safer place to work.
- The Series also achieved the Port of Long Beach Port Permit needed for the project to succeed.
- Our rebate application for TTI was delivered on time and successful. So, TTI received a significant contribution to the total project costs from their energy provider.

Overall, TTI now have a high quality, high output, and highly efficient lighting system at a cost-effective price – with superior customer service they can call on at any time.



CASE STUDY

Aarhus Port (Denmark)

Denmark's largest commercial port, Aarhus's six terminals serve container, multi, bulk, tanker, ferry, and cruise shipping. And it handles everything from coal to windmills – plus over 2,000,000 ferry passengers a year. Aarhus is responsible for a substantial part of Denmark's food and non-food products imported to and exported from the country. This has led to it being designated 'Port of European Importance' status.

Based in the very north Europe, the port regularly operates in sub-zero temperatures, and with high levels of humidity and salinity – which can cause issues when designing and installing portside equipment.

The challenge

- Introduce new high-mast LED lighting as part of a new quay extension.
- Have the new lighting integrate with the existing high power sodium controls.
- Find solution that could also cope with the significant corrosion levels already effecting existing portside equipment.

Sector: Maritime

Customer: AAR Port of Aarhus

Location: Denmark

Type of Harbor: Deep-water seaport

Annual Cargo Tonnage: 8.4 million

Project date: 2017/19/20

LED floodlights installed: 230

Type: Titan Series – 720

Energy Savings: 35%

Lux average values: 50 Lux

Payback: 2 years

This meant the bespoke lighting solution needed had to:

- Have an additional cable input to 'daisy-chain' the new lighting with the existing control system.
- And be made of specialist steel. Wingtip clearance for various types of aircraft.
- Keeping civil works needed for new cabling as low as possible.

Our solution

The first step was to provide Aarhus with a detailed design recommendation – covering mast placement and the suggested lighting needed to meet the port's challenges. Working closely with Aarhus's engineers we agreed on a route to deliver the solution needed. This then went through an evaluation stage before a period of in-situ testing.

The lighting we proposed was our Titan 720 as it:

- Is built from corrosion resistant 316 grade stainless steel.
- Was the best choice to deliver the high power, low glare, and high performance needed.
- Allowed us to cut the number of masts required by two, thanks to its highly asymmetric proprietary optics. This helped reduce Capex costs greatly.
- Delivered crisp white light and high colour rendering that significantly improved the visibility of the yard and quay.

This initial project was delivered at a lower cost and in a shorter timeframe than AAR thought possible. The client was so impressed with our products and way of working they've awarded us other projects – for 3 years running.



CASE STUDY

Terminal Intermodale Venezia (TIV)

TIV's location has made it the perfect meeting point between land and maritime transport for goods and commodities coming from, or going to, the Mediterranean, Black Sea, Middle and Far East and India. Dealing with both conventional and containerised modes of transport, it handles 320,000 TEU and anticipates a 10-15% growth in the next five years.

The challenge

- TIV needed to replace its outdated and highly inefficient 2kW HPS floodlights installed on aging high masts – without having to replace crowns or bracketry.
- Some of these masts were suffering from excessive weight loads. So, reducing wind exposed surface area and weight was paramount.
- The solution also had to guarantee a light level of 20 Lux – in a working environment often affected by dense fog.

Customer: TIV Terminal Intermodale Venezia
Location: Italy
Working area: 130,000m²
Project date: 2017

LED floodlights installed: 60
Type: Titan Series
Increase in light levels: 50%
Energy Savings: 62%
Lux average values: 20 Lux

Our solution

We installed our Titan 720 floodlights, which thanks to the compact size and flexible mounting options had no problem fitting on the existing structures.

Their high lumen output also guaranteed the required light level in a true 1 to 1 replacement, light spill was reduced to zero, helping to cut the light pollution of the terminal, which sits in the lagoon opposite the famous San Marco Square.

Before and after technical comparison

	SODIUM	LED
Energy consumption per year	483,750 kWh	181, 890 kWh
Colour temperature	2,700K	5,000K
Colour rendering index	25	70
Average light level	20 Lux	20 Lux
Uniformity	0.11	0.28
Energy savings		62.5%



CASE STUDY

The Port of Tyne (UK)

There has been a port on the Tyne since Roman days when it was used to supply the Roman garrison for Hadrian's Wall.

It's now grown into one of the most innovative and efficient deep-sea ports in the world and handles cargo from across five continents. And the cargo it can handle ranges from cars to containers and bulk goods to renewable energy and offshore. Many large cruise ship lines, such as Fred Olsen and Saga Cruises, also use the port as boarding point.

The challenge

The Port of Tyne was building a new dock extension and needed a high-mast lighting solution for it – fast. In just three months in fact. So, they put out a competitive tender for the design, delivery, and installation for the project. We won it.

Customer: Port of Tyne

Country: United Kingdom

Land Estate: 250 Hectares

Approx Annual Tonnage: 3,300,000

Project date: 2017

LED floodlights installed: 60

Type: Titan Series

Number of masts: 6

Increase in light levels: 50%

Lux average values: 20 Lux

Our solution

The tender specified that the lighting levels needed to have a 50 Lux average value. To make sure this was delivered we installed our Titan 420 series of floodlights on new 30m double-drums which raise and lower masts.

To help save energy we designed the system so that the photocell turned just four of the floodlights on at dusk. The six remaining floodlights could be turned on with a push button on the mast, to provide the higher Lux values when needed.

This turnkey project, which included delivering new masts and installing them on new concrete bases was completed to spec, on time and on budget. Because that's what we do.

Product used for the Port of Tyne: Titan Series

- A highly asymmetric floodlight providing an excellent solution for low glare applications.
- Our propriety optics deliver maximum light levels on designated areas.
- It's designed for maximum heat management.
- And it's manufactured to survive the harshest of environments, whilst delivering high performance and long life.
- Which in total makes it the go-to product for many of our maritime clients for years.

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