

November 2017, KREPEL Ltd.

Inovative Solutions in Maritime Led Lighting

KREPEL Ltd. is proud to inform that since september 2016 became an exclusive distributor and agent of Glamox Aqua Signal GmbH. Germany for the territory of Bulgaria and Romania.

Glamox Aqua Signal GmbH is a company in the Glamox Group. Glamox is a Norwegian industrial group that develops, manufactures and distributes professional lighting solutions for the global market. Manufactured products and lighting solutions are leading the world's marine and offshore markets, including recreational boats, mega yachts and navy.

Modern products and solutions

With the wide range of popular lighting brands, KREPEL can fulfill all maritime lighting requirements, including interior lighting, floodlights and searchlights, explosion-proof luminaires and navigation lights.

Glamox Aqua Signal is setting the standard for marine and offshore lighting with its innovative and energy efficient solutions for extreme applications.



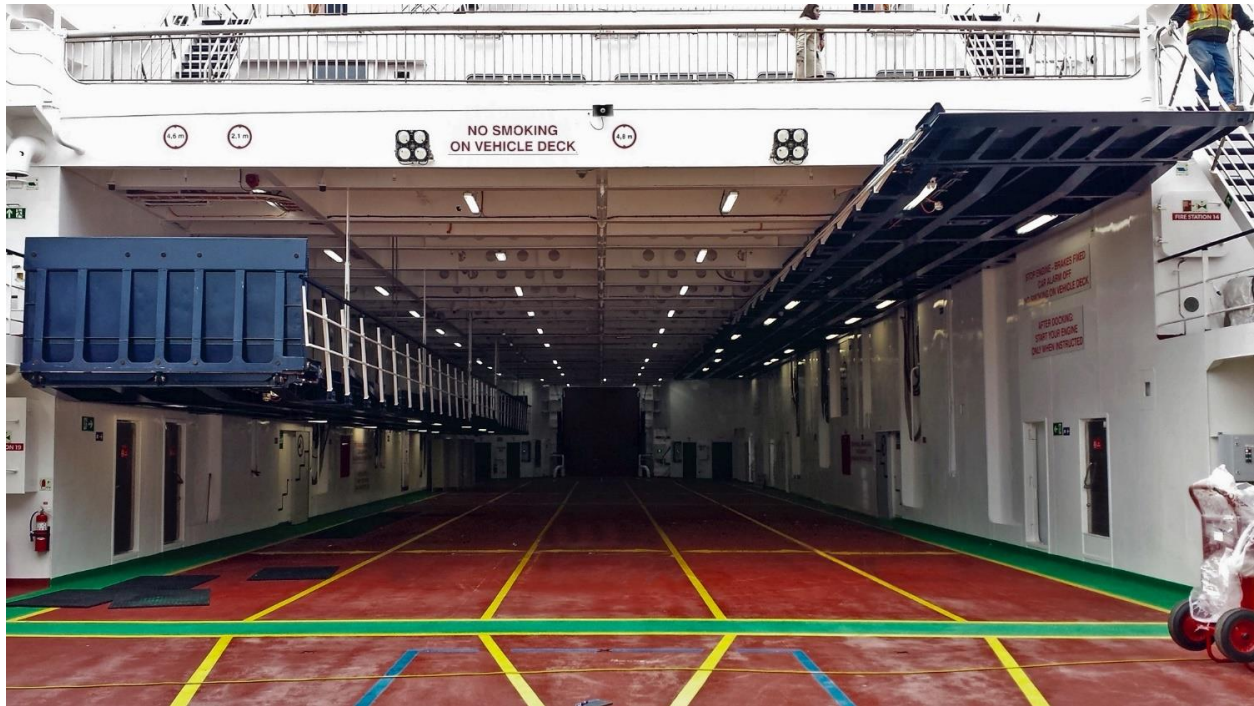
Technology and knowledge

KREPEL's products and solutions are developed and tested by manufacturer at own research and testing facilities, and manufactured and certified in accordance with all relevant quality and environmental standards. They are based on the latest technology and expertise - and generations of experience.

LED: Light source of the future

LED is without doubt the most talked-about issue in the lighting industry these days. What makes LED so interesting?

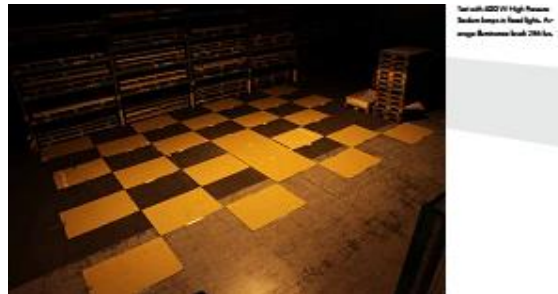
The LED technology is in rapid development, and LED has many applications. Because of the robustness of the diodes, LED is fast becoming the preferred light source in cold environments and for demanding use, such as on board ships, rigs, and moving machinery.



LED's advantages

One of the benefits of the LED is its long lifetime. LEDs last longer and do not need to be replaced as often as many conventional light sources. The reason is it has no movable parts or filaments that may break. That makes them particularly well suited where installation heights are large or when the luminaires are not easily accessible for lamp replacements.

LEDs are more efficient than many conventional light sources. The efficacy of the LED is measured in lumen per watt as nowadays it is around 200 lm/W. Because LEDs are perceived as brighter than conventional light sources, you may design installations with lower lux levels.



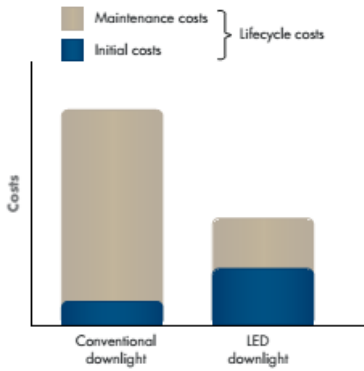
Test with 400 W High Pressure Sodium lamps in flood lights. Average illuminance level: 286 lux.



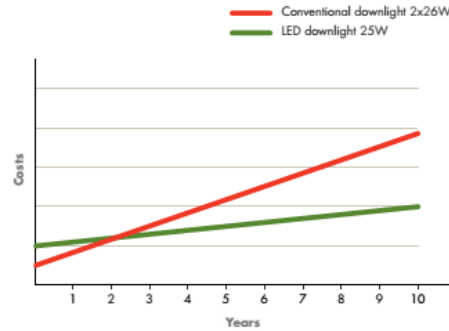
Test with 160 W LED luminaires. Average illuminance level: 95 lux.

Other advantages of the LED are the short response time, dimming possibility thanks to the LED drivers and the total cost.

The initial investment of the LED installation may be higher than that of a traditional lighting installation, but the LEDs lower energy consumption and maintenance cost may provide a lower total cost over the lifetime of the installation.



Principle of total cost of ownership



Comparison LED downlights / Compact fluorescent light

Market studies forecast that in 2020, close to 50 % of all new and replacement light source unit sales will be based on LEDs.

LED Floodlights- FL60 and FX60 series

The new LED floodlight series of Glamox Aqua Signal, offered by KREPEL are designed for installation and use in the hazardous areas, zones 1 and 2 and for safety areas.

By using the latest LED technology it offers a virtually maintenance-free solution for all high intensity lighting requirements.

The weakest link in most LED solutions are the drivers. LED solutions are dependent on conventional drivers (electrical control units) to manage the power input into the LED. FL60/FX60, however, do not have a conventional driver. The new engineering solution is an innovative and advanced **IC driver technology**, and the result is:

- extremely long system lifetime,
- highly improved system efficiency,
- wide ambient temperature range,
- flexible engineering, no inrush current.

The other critical point of the LED lifetime is determined by the temperature inside the diode.

In general when increasing the ambient temperature by 10 degrees, the lifetime is halved. For some Glamox luminaires, however, when increasing the ambient temperature by 10 degrees, the lifetime decreases by only 10.000 hours.





Technical characteristics

Application	IP 66/67 floodlight for decks and hulls, industrial areas * Hazardous areas, zone 1 and 2
Design	According to rules of maritime classification Societies and IEC standards
Approvals	GL approved * IECEx and ATEX approved
Ambient temperature	Operation temperature from -45°C up to +55°C
Housing	Modules in die-casted seawater resistant aluminium, designed for excellent heat management, frame and bracket stainless steel AISI 316L
Finish	Anodised modules
Optic	Floodlight is available in wide, medium or narrow beam characteristic, with clear polycarbonate front cover.
Available versions	Floodlights with 1 to 4 Modules corresponding 4 500 lumen to 18 000 lumen in 5 000 K light color
Electric	Integrated IC driver available in 120 V or 230 V 50/60 Hz, power consumption of 40 W per module, only. Modules connected in the external connection box. * Integrated IC driver available in 120 V or 230 V or 254 V 50/60Hz
Light source	Array of LEDs with 4 500 lumen output per module, with extreme long lifetime of 100.000 hours at ambient temperature of 45°C
Mounting	Adjustable bracket stainless steel 316 unpowdered 5x40 mm. as standard * Adjustable bracket stainless steel 316 unpowdered 8x50 mm. as standard
Connection	External connection box at the back with 2 Nickel

Technical heights, quality and reliability of Glamox Aqua Signal floodlights, series FL60 is related to many finished projects as for the most prestigious are brand new aircraft carriers **HMS Queen Elizabeth** and **HMS Prince of Wales**, being built for Britain's Royal Navy.



(info: www.krepel.bg; <http://www.bulnas.org/magazine/8broi.pdf>)