

BREAKBULK AMERICAS

Proper Lighting & Port Safety

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Abstract

Maritime port lighting is crucial for ensuring a safe and efficient work environment. This research examines advancements in port lighting systems designed to enhance visibility, safety, and operations. Focuses the impacts on port safety and energy consumption. While LEDs are widely used in other industries, their adoption in maritime settings is limited. Implementing LEDs could lead to 80% energy savings, improved efficiency for 24/7 operations general facility safety.

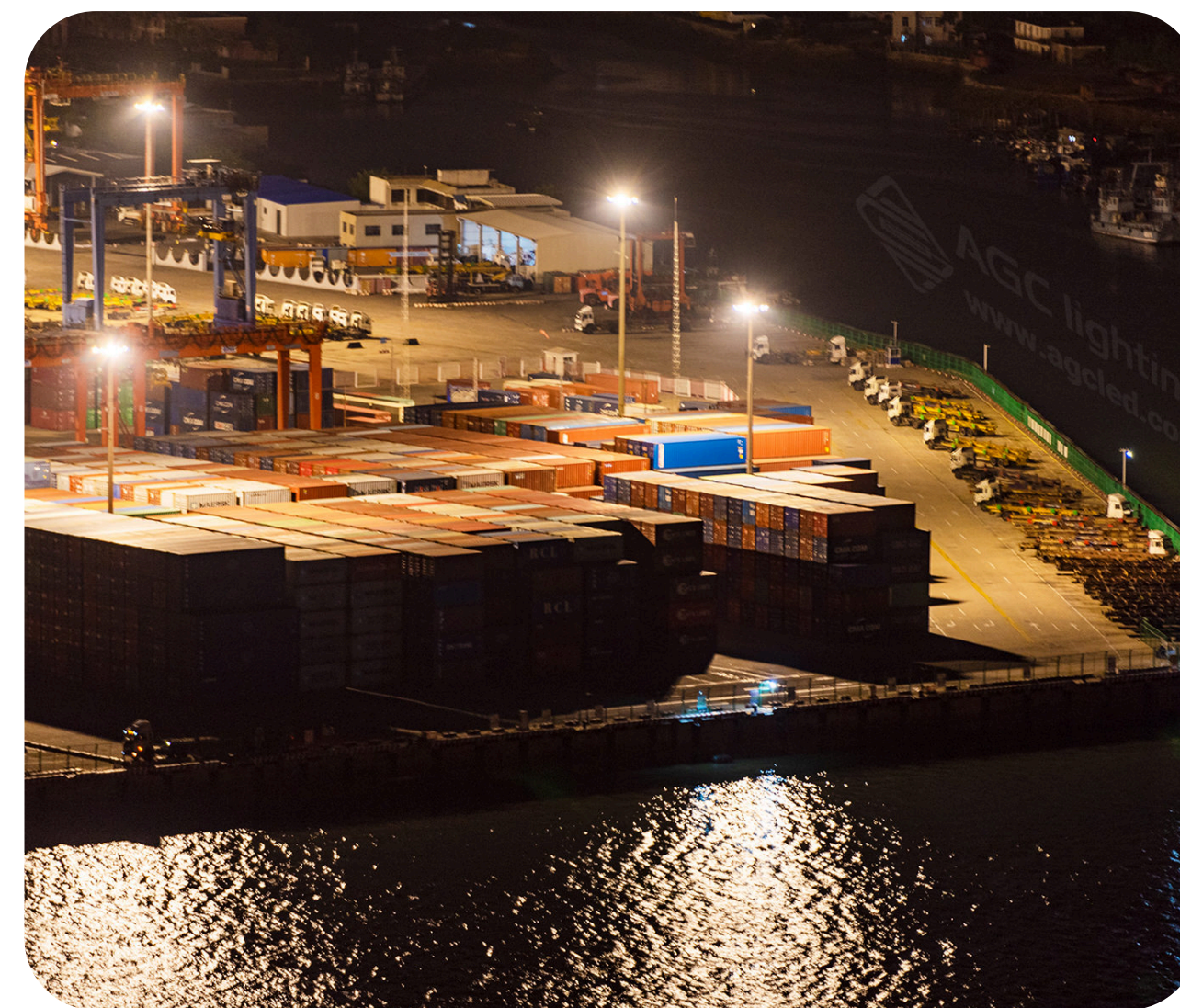


Figure 1: AGC Lighting



Figure 4: High Mast

Lighting Considerations

Fluorescent	Pros: Instant on, mid range initial cost, good CRI, good lumens per watt, long lamp life.	Cons: Requires large fixtures due to its linear shape, has reduced brightness in cold temperatures, and fails to light in very low temperatures
Incandescent	Pros: Instant on, low initial cost, compact size, good CRI, works in cold temperatures, no ballast or transformer required to operate.	Cons: Short lamp life, subject to vibration, low lumens per watt.
High Intensity Discharge	Pros: High lumens per watt, compact design for better control, full output in low temperatures, long lamp life, and resistant to vibration.	Cons: Slow start and re-strike time, poor CRI (except Metal halide), most expensive initial cost.

Potential Lighting



Figure 3: Port Lighting

Problem

- \$30-50 billion internationally recorded losses from theft annually
- Creates Navigation Hazards
- Risks Operational Delays
- Attracts Pirates
- Major carbon footprint from traditional lights
- More waste from non LED lights

Conclusion

- Proper lighting reduces electrical costs and carbon footprint.
- Improving port lighting can remarkably reduce port theft.
- Minimizes accidents in ports, and prevent potential collisions.
- Overall safety & security is improved with more effective lighting measures.

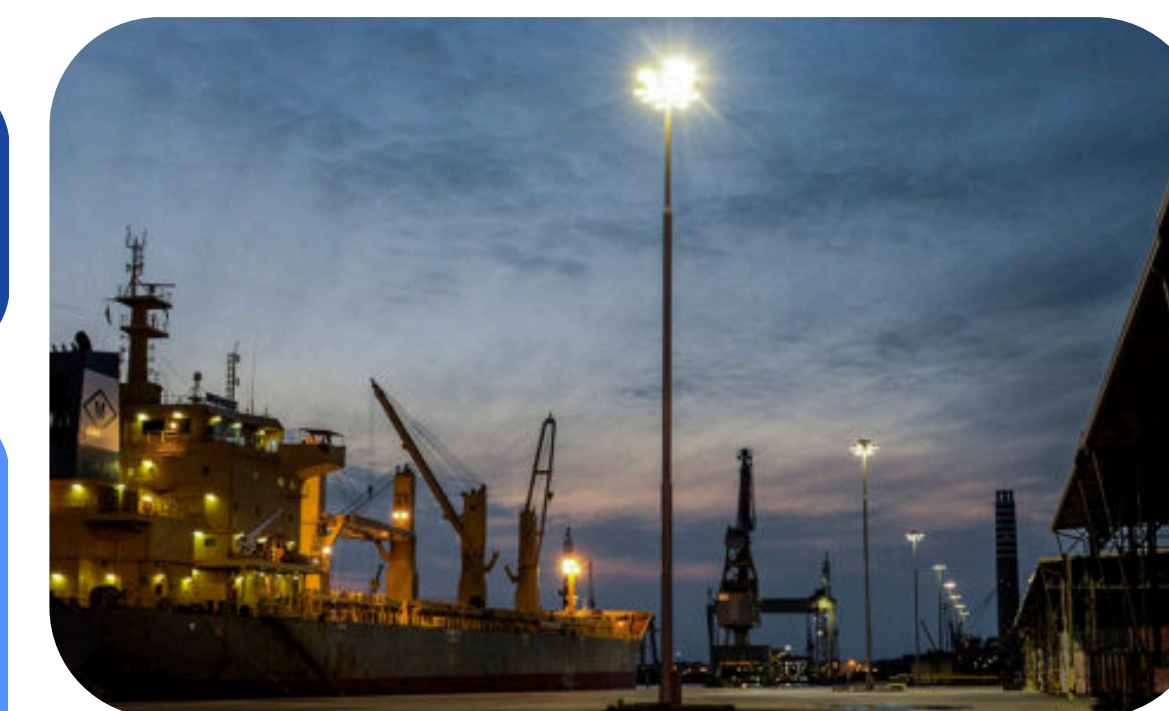
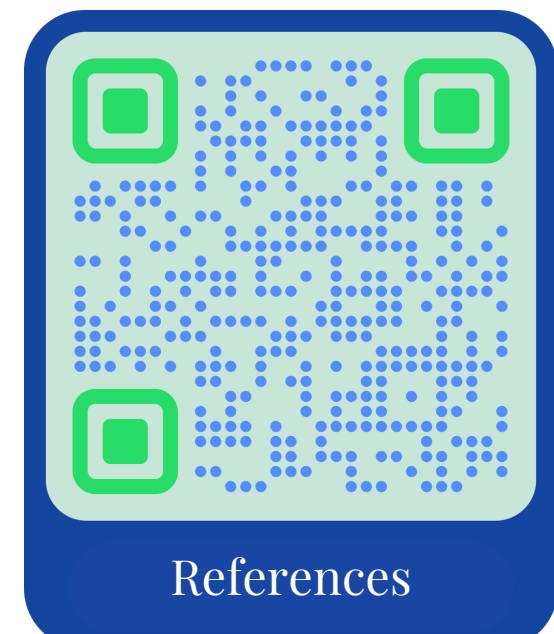


Figure 2: Port of Monfalcone



Meet the Researchers



References



Cullen College of Engineering
UNIVERSITY OF HOUSTON



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