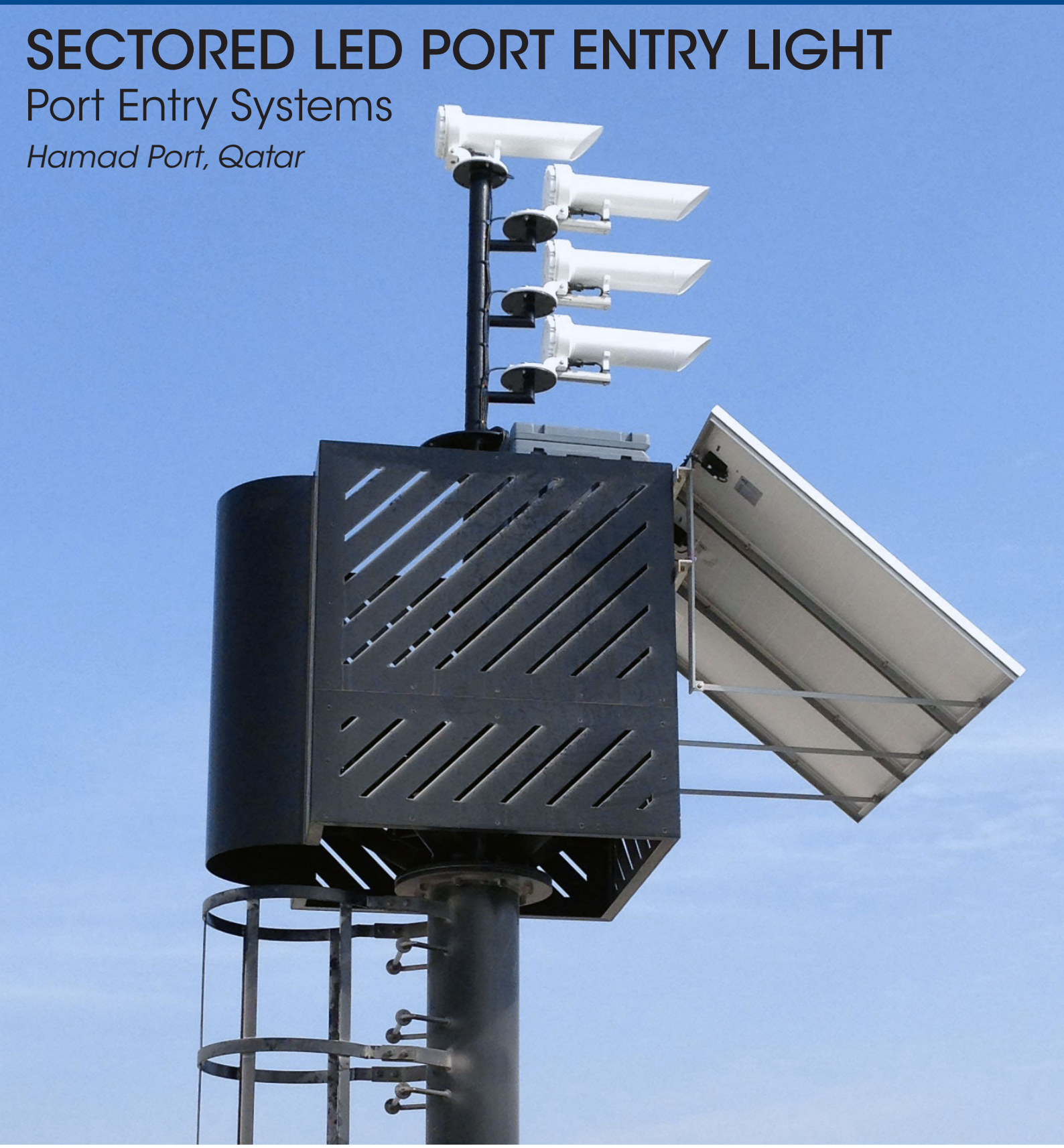
CASE STUDY

# SECTORED LED PORT ENTRY LIGHT

## Port Entry Systems

*Hamad Port, Qatar*



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# Project Overview

**Application:**
Government of Qatar is constructing a world class port for a rapidly growing economy

**Product:**
Sealite LED Port Entry Lighting System
SL-PEL-10, SL-GSM & Solar Power System

**Date**:
January 2016

**Location:**
Hamad Port, Qatar

## Background

Qatar is situated in the Arabian Gulf, occupying the Qatar Peninsula, which is located on the north-eastern coast of the Arabian Peninsula. Its lone land border is with Saudi Arabia which is to the south, with the rest of its region bounded by the Persian Gulf. A strait in the Persian Gulf separates Qatar from the nearby island of Bahrain, as well as sharing sea borders with the United Arab Emirates and Iran.

The Government for the State of Qatar, represented by the New Doha Port Steering Committee, is presently constructing a new world class port to cater for the rapidly growing economy of Qatar. The Hamad Port, alternatively known as "The New Doha Port" is being constructed approximately 25km south of Doha city. The port has been strategically positioned to allow for easy access to current and future industrial and economic zones in the south and west of Doha City.

## The Challenge

Manoeuvring large vessels through congested or unfamiliar waters is dangerous and poses many risks. The Captain or Master is responsible for the ship until the vessel reaches a certain proximity to the port, after that a pilot boards the inbound vessel either via high-speed pilot-boat or helicopter transfer. The pilot is an experienced shiphandler who has in-depth local knowledge of the waterways, weather and tidal conditions and is an expert in berthing/unberthing operations and the final docking of the ship.

Navigating the final apprach to berth is one of the the most challenging component of the ship's voyage. The pilot while on the approach to the port will look for visual cues from navigational aids. These can be fixed markers with signage during the day and lit during the night hours; they are usually laterally to the vessel to allow the mariner or pilot to navigate a fixed channel along the preferred route.

Hamad Port or New Doha Port wanted to enhance the safety and efficiencies of the port operations during vessels inbound approach, and they specified during the ports construction for the inclusion of a port entry lighting system installed to assist the Pilots in navigating the channel approach.

## The Solution

Sealite worked with their local distributor United International, who was awarded the tender to supply, install and commission the port entry lighting system.

The sectored port entry light (PEL) is a projector style marine beacon which is used to guide marine vessels. It projects a coloured sectored light out to sea with a very precise colour change as the mariner or pilot transitions from one colour sector to the next. The PEL's application becomes relevant to the mariner when combined with a local marine chart as each application of a PEL varies significantly based on their location and the individual channel path.


Sealite has developed the Port Entry Lighting System to utilise LED technology, allowing for the systems to be placed in locations without mains power and can run directly on a solar power supply.

A traditional incandescent 4 PEL systems would draw significant power consumption preventing the system from using a solar power supply. An LED PEL System compared to a traditional incandescent system can see energy savings anywhere from 20 - 80% depending on the system.

The core advantage of a LED PEL sectored light is that it has very precise transitions between colours (typically 1 minute of ARC) and in this application it is bright enough to be used in daylight hours up to 3.5 Nautical Miles or 6.482 km. LED PEL's can vary significantly based on their specific location and have up to a maximum of 23 Nautical Miles or 42.5km approx visibility at night depending on its configuration.

## The Outcome

The Hamad port has seen significant improvements in safety for inbound approaching vessels, without the aid of the port entry light mariners or pilots would have to navigate with few visual cues and would have to rely on other instruments increasing risks for the vessel.

All Sealite products are manufactured to exacting standards under strict quality control procedures. Sealite's commitment to research and development, investing in modern equipment and advanced manufacturing procedures has made us an industry leader in solar marine lighting.

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