

NEED & CUSTOMER REQUIREMENT

Need: The existing deck surface lamp is a high maintenance item that does not illuminate a large enough area of the flight deck on LHA/LHD & other class ships. The existing lights do not provide the illumination, dimming, control and night vision compatibility necessary to adjust to the various lighting and atmospheric conditions experienced during at-sea aircraft operations for crew safety and night operations.

Value to the Warfighter: The new deck flood lights will provide a bright and uniform lit safe work environment for deck crews at a wavelength compatible with Night Vision Devices (NVD).

Operational Gap: The legacy deck surface floodlight uses incandescent lamps and is filtered for NVD compatibility. It is a high maintenance item that does not illuminate a large enough area of the flight deck on larger ships.

Customer Specifications: The new lamp is required to be a form, fit and functional replacement that will minimize ship impact, installation and/or integration. It will provide 1 to 5 foot-candles of optical power and overlapping beam uniformity of less than 10 to 1. Also, it will be NVD friendly with an NRa of less than 1.7E-10 per LED. The new lamp will operate from the existing AC power feeds while meeting shipboard environmental requirements including shock, vibration and EMI.

Technology Description: The new deck flood lamp uses cyan light emitting diodes to provide deck illumination that is visible to deck crews and is friendly to night vision devices. Our optical system is divided into three subsystems that provide optical power at long, medium and close ranges. Our deck lamp is designed to fit in existing deck lamp locations as a direct replacement. It has an inner housing to isolate the optics and electronics from the environment and an outer shell for easy assembly and maintenance of the inner housing. It also operates directly from the ship 115Vac standard power supply.

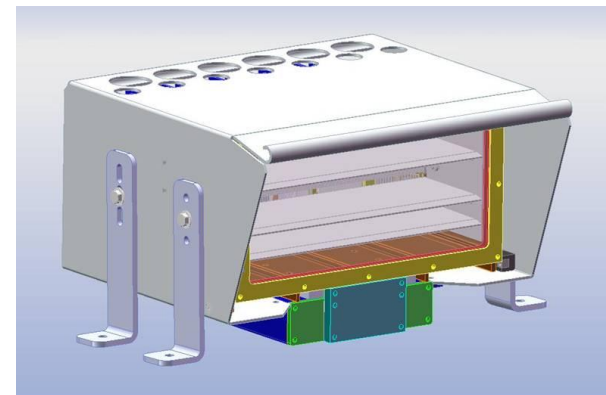
SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: NAVSEA

Transition Target: LHA/LHD & Other Class Ships

Original Sponsoring Program:
PEO Ships: PMS 377

TPOC Phone Number:
732-323-1696



TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Phase 1	3	Low	Conceptual design and Demonstration of Illumination System	June 2006
Base Phase 2	4	Low	Complete Preliminary design review	June 2009
Option 1 Phase 2	5	Low	Complete Critical Design Review	Jan 2010
Option 2 Phase 2	6	Low	Illumination output meets functional requirements	Jan 2011

Open contract: N00024-08-C-413 ending June 20, 2009

TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

Other Potential Applications:

Our target application is to integrate the deck lamps into new ship construction. Because of our form, fit and functional feature, we will be able to replace legacy shipboard deck surface lamps for LHA/LHD (Assault Ships), DDG-51 Destroyers and other class ships. Other applications that require large area illumination would also benefit from this technology such as fields, parameters, courts, helicopter ports and specialty indoor or outdoor architecture lighting.

Business Model:

Breault will transition the new deck flood lamp from development to manufacturing. Through our Phase 2 contract, we plan to validate the functional and environmental performance of our deck lamp to show that it technically ready to be inserted into the fleet. We will use other external and internal funding sources to setup and qualify our manufacturing capability. As part of the is process, we develop the quality systems to ensure that we meet the Navy's logistic requirements and document the deck lamp's assembly and functional test results.

Objective:

Our objective is to meet performance, maintenance and logistic requirements that satisfy the Navy's procurement requirements. As the deck lamp transitions from development to manufacturing, we need the transition requirements to ensure we correctly document the deck lamp's assembly and test results and forward those documents to our customer with the delivered deck lamps.