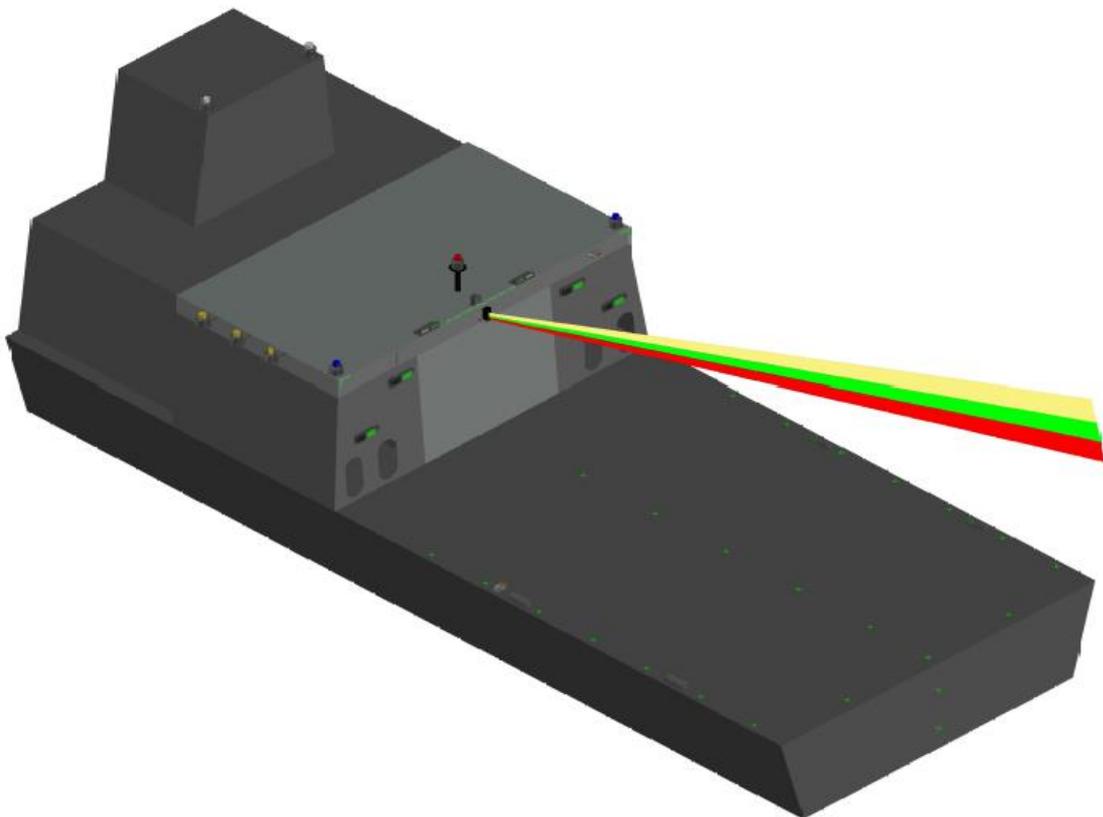


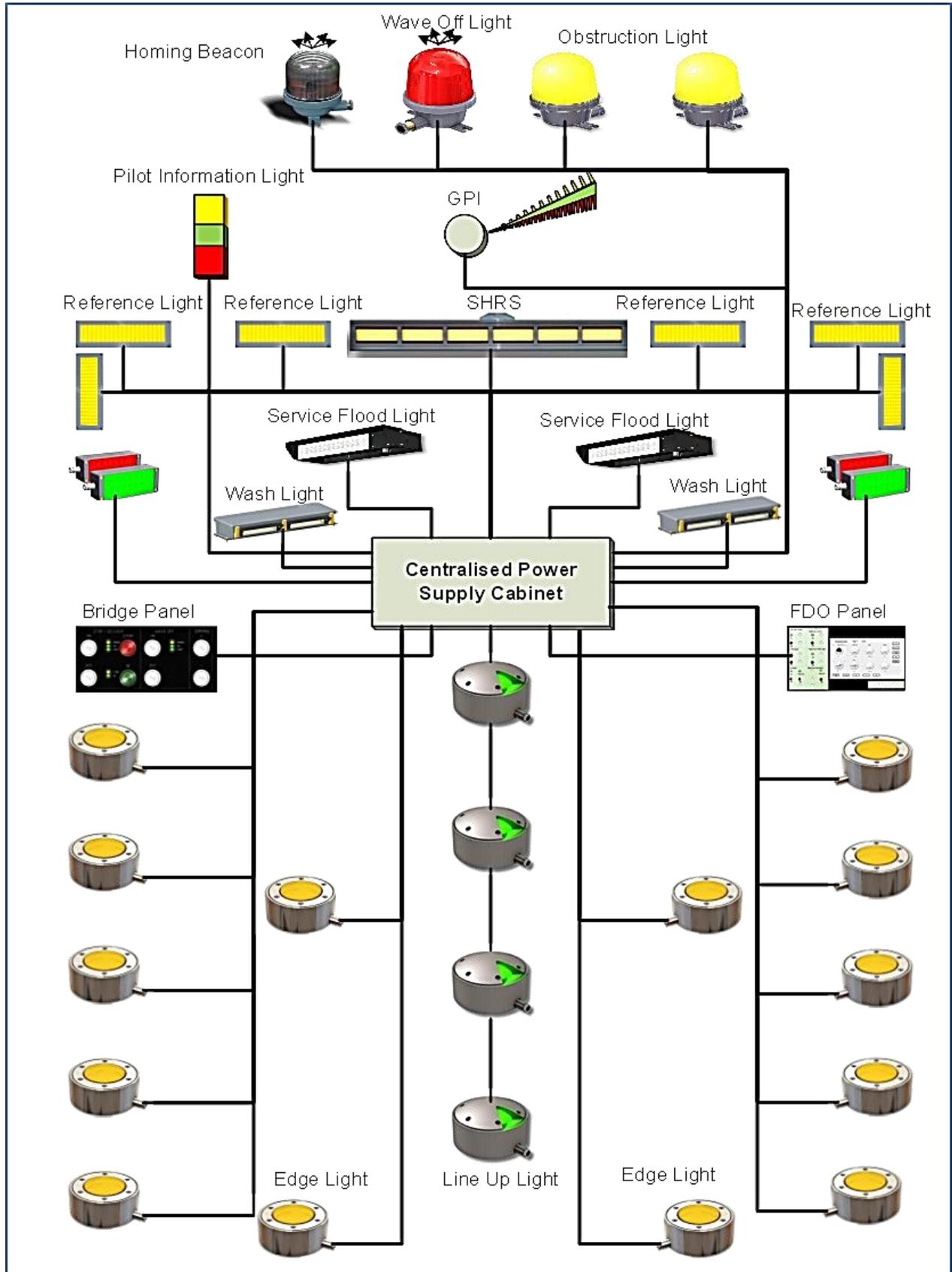
# NVG Compatible LED Lights for Helo Deck Visual Landing Aid System on Indian Navy Ships

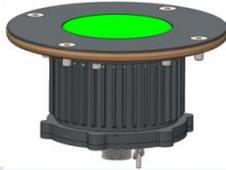
## Introduction

- The integrated Helicopter Visual Landing Aid System (HVLAS) provides
  - Optical references and signal to facilitate landing of a helicopter on deck of a ship at sea.
  - It also provides deck illumination for night operations.
  - It predicts and recommends exact moment of touch down based on the “Energy Index” computation of the ship
- The main constituents of HVLAS are
  - NVG Compatible LED lights suite
  - Centralised control unit
  - Landing Safety Office (LSO) Panel
  - Motion Reference Unit
  - Stabilised Horizon Reference System
  - Landing Support System Software
  - Glide Path Indicator



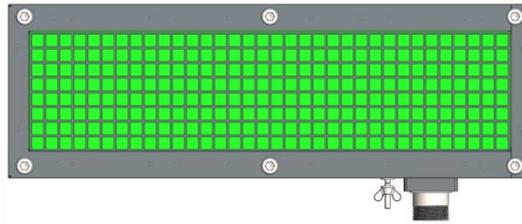
# Layout and Schematic of HVLAS





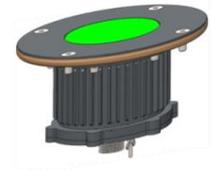
Deck Edge Light

- FOV: 360°x120°
- Intensity: 90 Cd
- NVG Green



Hangar Reference Light

- FOV: 160°x160°
- Intensity: 30 Cd
- NVG Green



Line-up/ Extended Line-up Light

- FOV: 360°x180°
- Intensity: 90 Cd
- NVG Green

Obstruction Light



- FOV: 360°x180°
- Intensity: 30 Cd
- NVG Blue



Waive-Off Light

- FOV: 360°x180°
- Intensity: >500 Cd
- NVG Red Flashing



HIFR Light

- FOV: 360°x180°
- Intensity: 30 Cd
- NVG Amber



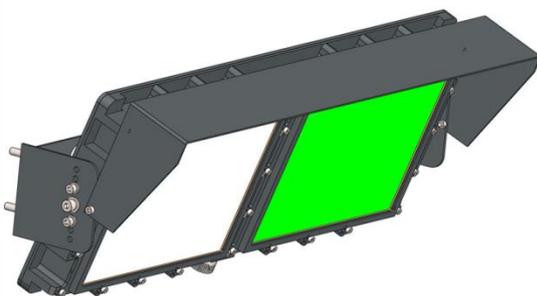
Homing Beacon Light

- FOV: 360°x180°
- Intensity: >1000 Cd
- White Flashing (Non-NVG)



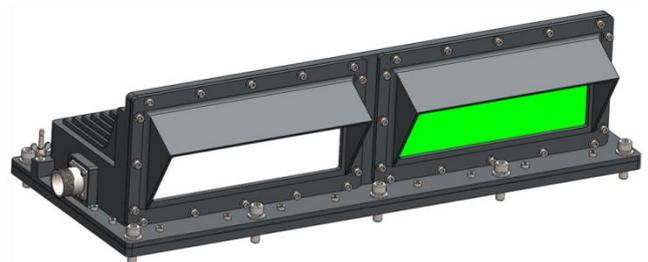
Stop-Go Light

- FOV: 160°x160°
- Intensity: >150 Cd
- NVG Red/NVG Green



Deck Service Floodlight

- FOV: 30°
- Intensity: >500 Cd
- White(Non-NVG)/NVG Green



Hangar Washdown Floodlight

- FOV: 100° x 4°
- Intensity: 300 Cd
- : White (Non-NVG)/NVG Green



Deck Surface Illumination Floodlight

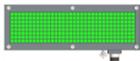


Pilot Information Display

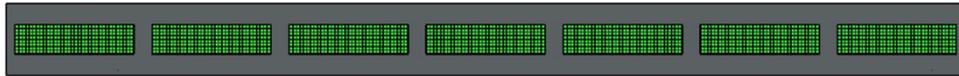
- FOV: 160° x 160°
- Intensity: 50 Cd
- Red/Green/ Amber (NVG)

- FOV: 100° x 4°
- Intensity: 300 Cd
- : White (Non-NVG)/NVG Green

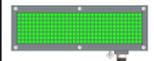
- FOV: 160°x160°
- Intensity: 50 Cd
- NVG Green



Horizon Reference Light



Lights for Stabilised Horizon Reference System (SHRS)



Horizon Reference Light

## Status

Functional prototypes have been developed. The technology has been developed and transferred to M/s Elcome Integrated Systems Pvt. Ltd., Mumbai for further production.