High Mobility Airfield Lighting Systems™ (HMALS)

Avlite Systems is an international designer & manufacturer of complete aviation lighting systems; airfield, heli & obstruction.

We believe technology improves navigation™
Avlite Systems' High Mobility Airfield Lighting Systems provide robust portable lighting solutions, ready for immediate deployment for either temporary or long-term operations.

With almost 40 years of design and manufacturing experience, the High Mobility Airfield Lighting Systems (HMALS) are offered in solar, hardwired and hybrid configurations to suit a variety of requirements, including military and emergency airfield lighting.

**Variety of HMALS Configurations**

The solar configuration of Avlite’s High Mobility Airfield Lighting System consists of runway edge and threshold lights, Runway End Indicator Lights (REILs), taxiway and obstruction lights, and necessary mounting.

The hardwired, AC powered High Mobility Airfield Lighting System (HMALS) includes runway edge lighting, approach lighting, threshold/end lighting, taxiway lighting, Precision Approach Path Indicator (PAPI), distance-to-go markers and lighting, and obstruction lighting for up to 150ft. x 10,000 ft. (45m x 3,000m) runway. In case of generator or cable failure, a Hybrid HMALS option is available which includes a Battery Box.

A Medium Intensity Approach Lighting System with Runway End Indicator Lights (MALSR) Trailer is also available as part of the High Mobility Airfield Lighting System from Avlite.

**Military Grade Trailer**

All HMALS components are built on a 24-VDC tactical trailer, constructed of aircraft grade aluminum and chromoly steel with blackout convoy lights.

**Features**

- All-in-one portable solar airfield lighting system
- Heavy-duty trailer design for transportation and storage
- In-trailer charging system based on solar and AC for all lights when in storage
- Complete wireless control of airfield lighting once deployed
- Customizable lighting configurations available to suit various applications
- Optional Infrared (IR) Mode, illumination invisible to the naked eye to support NVG operations

**Applications**

- Military
- Emergency airfield lighting
- Stand-by system in event of power failure
- Humanitarian aid / medivac

**Compliance**

- Can be supplied to meet: International Civil Aviation Organization (ICAO) Annex 14 emergency lighting photometrics or FAA VFR & IFR Non Precision Medium Intensity Runway & Taxiway Lighting (MIRLs) photometrics
Runway Layouts: Solar And Hardwired

Solar Runway Layout - 10,000ft/3000m

- Solar Edge Light
- Taxiway/Obstruction Light
- Solar Trailer
- Threshold

Hardwired Runway Layout - 10,000ft/3000m

- Optional CAT I High Intensity Runway Edge Threshold Lighting

- PAPI Series III
- Battery Box
- Trailer 1
- Edge Light
- Taxiway/Obstruction Light
- Threshold

*5000ft/1500m option available

Runway Layouts: Solar And Hardwired
AV-HMALS Solar System Components

Optional Components

Precision Approach Path Indicator (PAPI)
- FAA, ICAO and UFC Compliant Photometric and Chromaticity
- Two configurations – One 4-Box or Two 2-Box
- Three intensity steps High, Medium and Low
- Photocell control for Day/night intensity transition
- Lightweight, portable equipment for each deployment on tactical legs
- PLC remote control via low voltage power cables or local manual control at each PCU
- Battery boxes for quick deployment and back-up in case of generator or cable failure
- Tilt switch to insure any misalignment of a single LHA automatically shuts the system down
- IR mode standard
- Optional RF Control
- Optional Heated Lens for artic deployments

*Optional accessories include Precision Approach Path Indicator, MALSR, SSEALS, ERGL

High Mobility Airfield Lighting Systems™ (HMALS)

RF Controlled Runway Edge Light
- Over 100 hours operating time at maximum intensity
- Easily deployable solar runway lights for VFR and non-precision IFR lighting
- AvMesh® integrated Mesh Network - Each light is a receiver/transmitter to expand communication range
- Three intensity steps: High, Medium, Low

RF Controlled Compact Runway Edge Light
- Easily deployable solar runway lights for VFR and non-precision IFR lighting
- AvMesh® integrated Mesh Network - Each light is a receiver/transmitter to expand communication range
- Three intensity steps: High, Medium, Low

RF Controlled Solar Taxiway Light
- Self-contained, easily deployable solar taxiway lights and IR
- Two high-performance solar modules maximize solar collection
- Vertical divergence of between 0 to 17 degrees
- Made from durable UV-stabilized LEXAN® polycarbonate
- Typical applications include; taxiway lighting, emergency airstrip and caution lighting
- Optional RF Control

High Mobility Airfield Lighting Systems™ (HMALS)
Avlite’s AV-HMALS™ (High Mobility Airfield Lighting System) provides reliable runway and approach lighting designed for portable and expeditionary applications. The AV-HMALS provides storage for 5,000 ft. of runway edge, runway end / threshold lights and approximately 11,000 ft. of power cable on two reels.

The trailer configuration allows for 68 runway lights, GFE or optional two 2KW generators and optional 4 box PAPI and associated battery boxes. Internal batteries or battery boxes allow lighting to be deployed for several days while provisions are made to deploy the cables and generators. One hundred feet of rollover cable covers are stored beneath the trailer and recharging receptacles allow all battery powered components to charge when the system is stored. Optional 4-box, portable PAPI system or two portable 2-box PAPI systems is available.

The lighting utilizes power line communication via the low voltage power cables for control via a ruggedized notebook HMI interface. The interface comes standard with 500 feet of SJOOW cable (custom lengths available).

### Trailer Highlights
- Engineered to match the track width and clearance of the U.S. Military HMMWV
- Exceeds speed and payload requirements
- Independent, torsi elastic, shock mounted suspension
- Rugged, riveted aircraft-aluminum construction
- HMMWV interchangeable lights and tires
- Durable E-coat finish provides superior corrosion protection
- Integrated charging system to charge batteries while in storage
- Captive hardware for easy deployment and storage

### HMALS System Components
- Sixty-Eight (68) Medium Intensity Runway Lights – Edge and Threshold
- Infrared (IR) for all runway and approach lighting standard
- One (1) Ruggedized Notebook for Power Line Communication (PLC) Control
- One (1) PLC Adapter
- One Hundred (100) feet of rollover cable protection
- One (1) Military Grade Trailer with run flat tires
- One (1) Integrated Charging System
- Twelve Thousand Five Hundred (12,500) Feet for SJOOW cable with built in junction connectors and Ts

### Optional
- Four (4) Precision Approach Path Indicator (PAPI) Light Head Assemblies (LHA)
- Two (2) PAPI Power Control Units (PCU)
- Two (2) PAPI Battery Boxes
- Radio Frequency (RF) Communication
- Solar Power Supply System
- Onboard Generators

### Ruggedized Control
- MIL-STD-810G certified [6’ drop, shock, vibration, rain, dust, sand, altitude, freeze/thaw, high/low temp, temp shock, humidity, explosive atmosphere]
- MIL-STD-46F certified
- IP65 certified sealed al-weather design
- Shock mounted caged storage drive

### Power and Control
- Lightweight flexible SJOOW cable for easy deployment and retrieval
- Battery operation for immediate deployment, low voltage (90-265VAC) via power cable for sustainable operation
- Power line communication via adapter and ruggedized laptop HMI connected to low voltage power cables, no transformers or transponders required
- Power cable includes built in connectors for lights and battery boxes at correct spacing’s
- Batteries are charged via the power cable, but it the battery fails the battery is bypassed and the lights powered directly from the cable
- Powered by GFE Generators
- Optional RF Control
- Option: 2 – 2KW Generators

### Accessories
- 100 feet of rollover cable covers
- Tool Kit
- System Manuals
- Storage Box
- Optional Berry Amendment compliant cover
**Precision Approach Path Indicator (PAPI)**
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- Three intensity steps High, Medium and Low
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- Lightweight, portable equipment for each deployment on tactical legs
- PLC remote control via low voltage power cables or local manual control at each PCU
- Battery boxes for quick deployment and back-up in case of generator or cable failure
- Tilt switch to insure any misalignment of a single LHA automatically shuts the system down
- IP rated standard
- Optional RF Control
- Optional Heated Lens for artic deployments

**Battery Box**
- Rugged
- Durable
- Custom made
- Customizable for specific application
- Internal bracing to hold batteries in place
- Ergonomically designed handle for easy retrieval

**RF Controlled Solar Taxiway Light**
- Self-contained, easily deployable solar taxiway lights and IR
- Two high-performance solar modules maximize solar collection
- Vertical divergence of between 0 to +7 degrees
- Durable UV stabilized LEXAN® polycarbonate
- Applications include taxiway lighting, emergency airstrip and caution lighting
- Optional RF Control

**Short Simplified Expeditionary Approach Lighting System (SSEALS)**
- Runway Alignment Indicator Lights
- Sequenced Flashing Lights per MALSR
- FAA-E-2628 (Photometric and Chromaticity)
- GPS synchronized lights w/ external antenna, no extra cabling or control cabinets
- Synchronized via unique addresses per unit 1, 2, 3, 4, 5, with 33.3 millisecond separation
- RF Control Installed in light head w/ external antenna
- IR Optional

**Steady Burning Light**
- Self-contained, easily deployable solar taxiway lights and IR
- Vertical divergence of between 0 to +7 degrees
- Durable UV stabilized LEXAN® polycarbonate
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**Tactical Signs**
- FAA Approved typeface
- DRMs, hold position signs, taxiway indicators and apron way finding signs
- Proven tactical airfield marking solution for retro reflective, illuminated and daytime operations
- Durable dual layer aluminum sign board construction
- Full LED Signs available

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**AV-HMALS Hardwired System Components**
- HMALS shown with optional PAPI and Onboard Generator

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High Mobility Airfield Lighting Systems™ (HMALS)
Medium Intensity Approach Lighting System with Runway Alignment - Sequenced Flashers

The MALSR Barrette is lightweight and available in a folding portable or permanent frangible version. LED optics achieve the lowest power consumption and highest intensity, with a wide variety of control and power options. It is compliant with FAA MALSR, UFC-3 and NAVAIR-51 standards for Medium Intensity Approach Lighting Steady Burning Array.

Each Barrette is composed of five lamps mounted on a rectangular tube to maintain spacing. The portable version features a central hinge and compact electronic enclosure for convenient transport.
**CAT 1 Expeditionary Lighting**

**Complete Approach Lighting**
- PAPI (VIS/IR)
- MALSR (CAT 1)
- REIL
- SSEALS

**Provides an Expeditionary Airfield Lighting Solution**
- Runway Edge, Threshold and End HIRL (CAT 1)
- ERGL
- SIGNS
- Wind Cone
- Obstruction Lighting
- PLC and Wireless Control
- Solar, Wired or Hybrid

Avlite offers a CAT 1 solution based on Solar and/or Hybrid power.

**FAA Definition:**
A Category I (CAT I) approach operation is a precision instrument approach and landing using an instrument landing system with a decision height (DH) not lower than 200 ft and with a runway visual range (RVR) not less than 1800ft.