

AVIATION LIGHTING

High Mobility Airfield
Lighting Systems™
(HMALS)



Avlite®
www.avlite.com



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 (MALSRL) 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

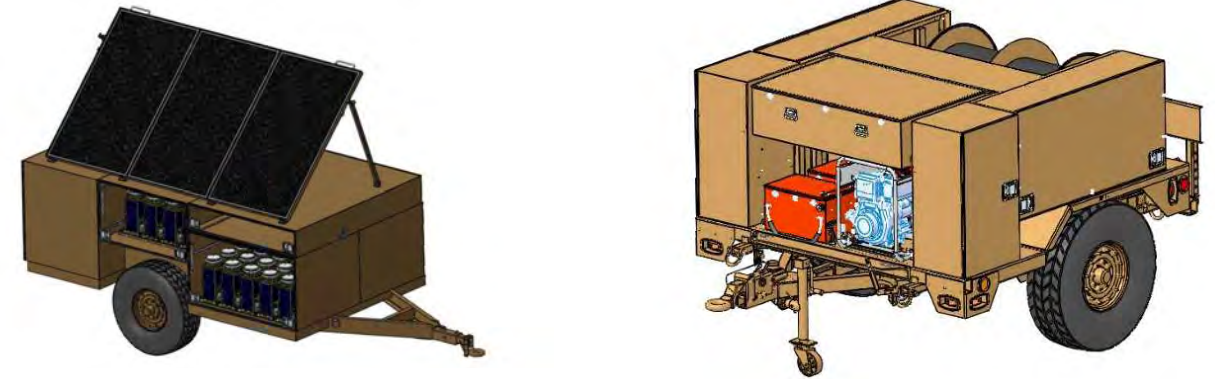
- All-in-one portable solar airfield lighting system
- Heavy-duty trailer design for transportation and storage
- In-trailer charging system based on solar and AC for all lights when in storage
- Complete wireless control of airfield lighting once deployed
- Customizable lighting configurations available 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



Trailer Design

The Solar PALS storage and deployment trailer is specifically designed to withstand the harshest environmental conditions.

The trailer performs over a wide variety of terrains, making it incredibly reliable and durable for both civilian and military applications.



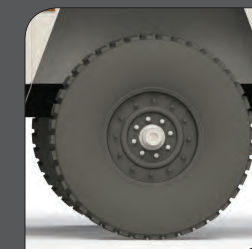
Integrated Charging

An integrated charging system ensures every light is fully charged in storage for immediate use. Once deployed, lights are charged by their individual solar modules to allow for autonomous operation.



Trailer Hitch

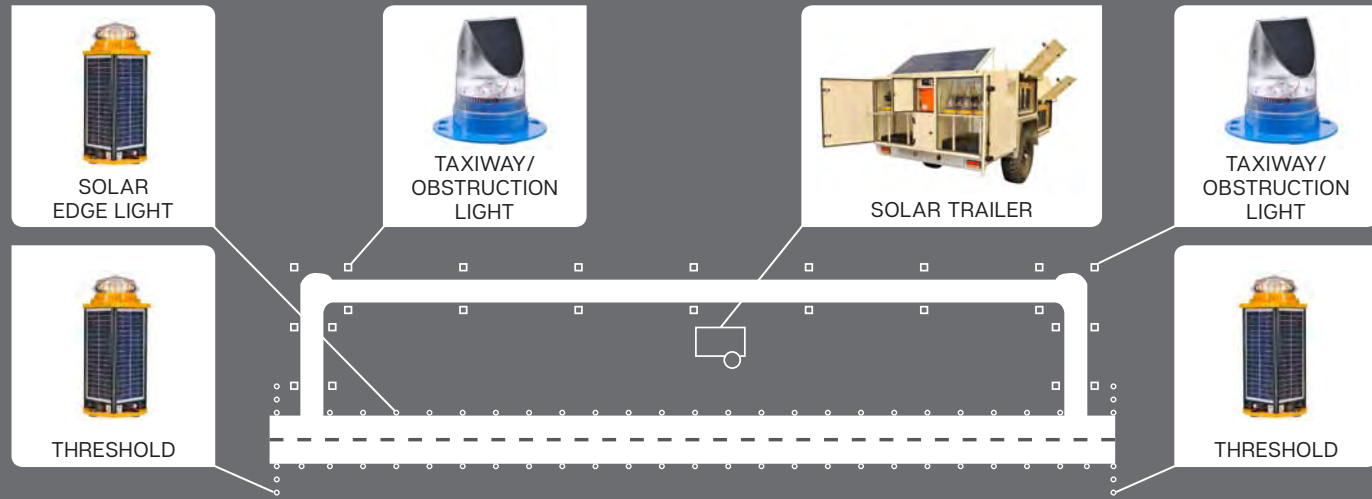
Avlite's trailers offer a range of customizable options including trailer hitches such as; Standard Ball mount (Civilian) and Pintle Ring also referred to as Military Hitch (Military).



Tactical Run Flat Tires

Run-flat tyres are designed to resist the effects of deflation when punctured, and enable the vehicle to continue to be driven in all terrain and combat situations, ensuring mobility and safety to vehicles, civilians or soldiers.

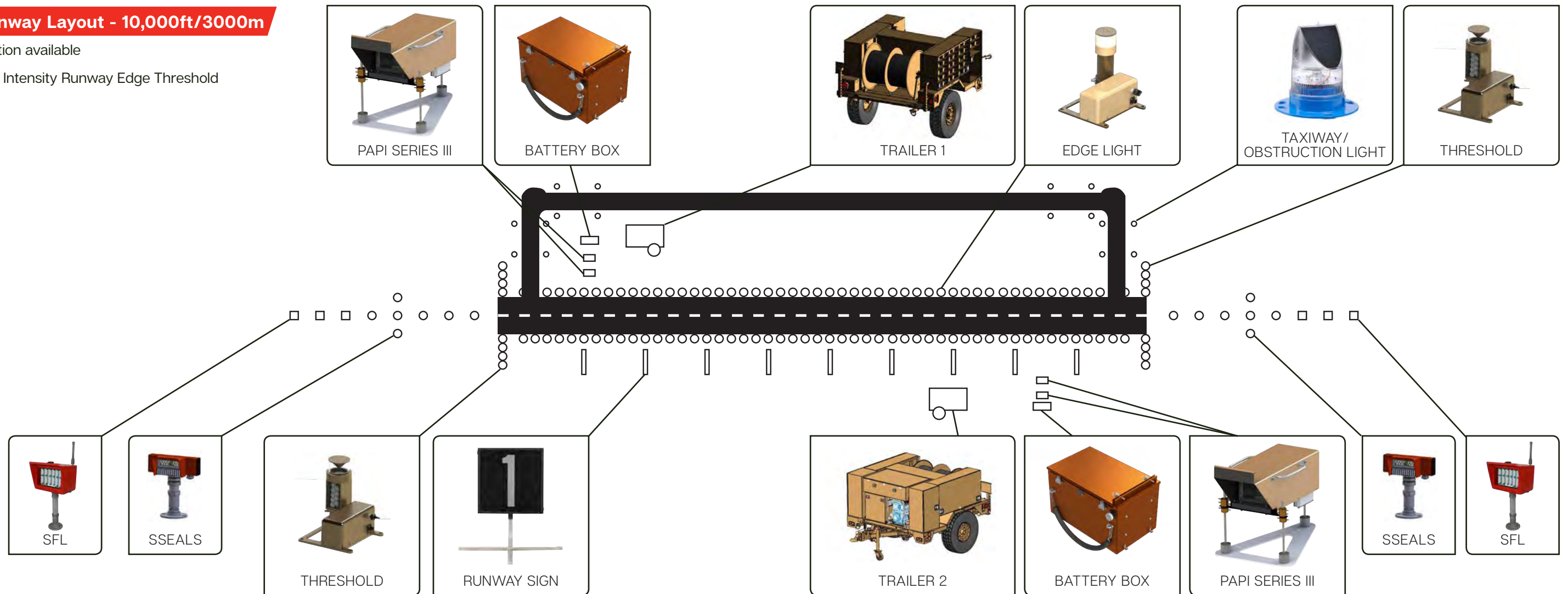
Solar Runway Layout - 10,000ft/3000m



Hardwired Runway Layout - 10,000ft/3000m

*5000ft/1500m option available

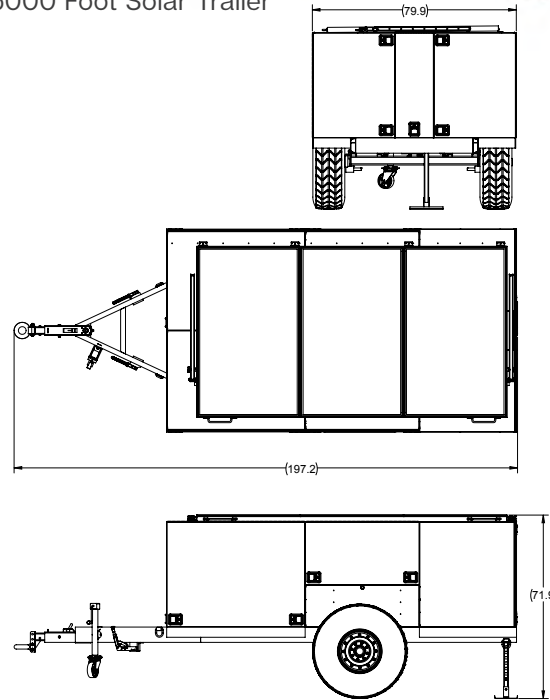
Optional CAT 1 High Intensity Runway Edge Threshold Lighting



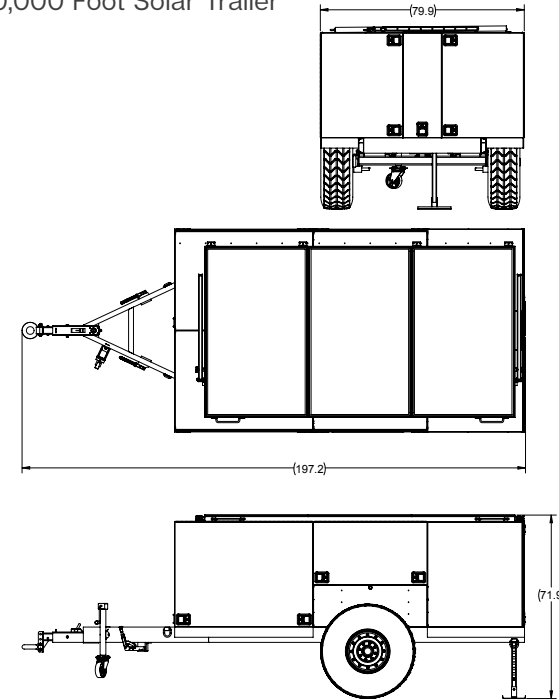
AV-HMALS Solar System Components



5000 Foot Solar Trailer



10,000 Foot Solar Trailer



Optional Components



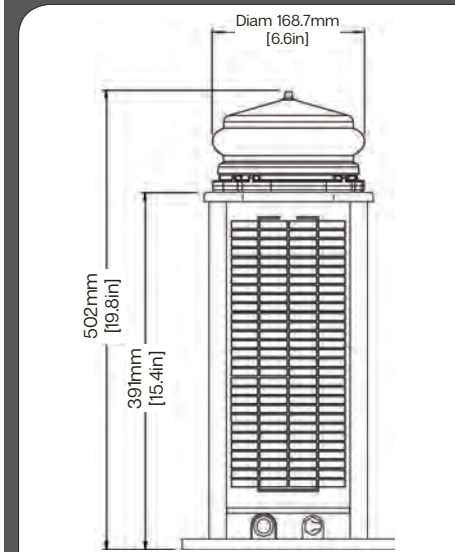
Precision Approach Path Indicator (PAPI)

- 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

AV-HMALS Solar System Components

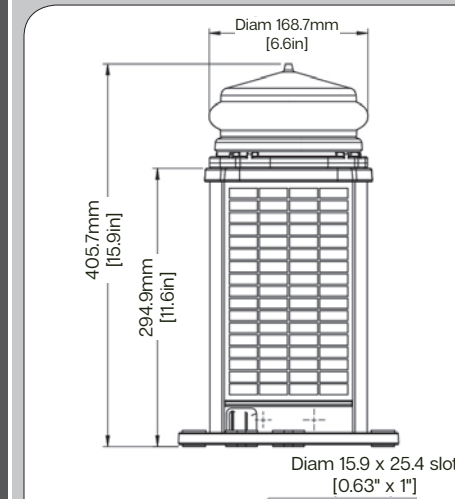
RF Controlled Runway Edge Light

- 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
- Programmable lighting groups
- Typical applications include; approach/REIL (strobe and fixed), solar runway lighting and solar threshold lighting
- Optional RF Control



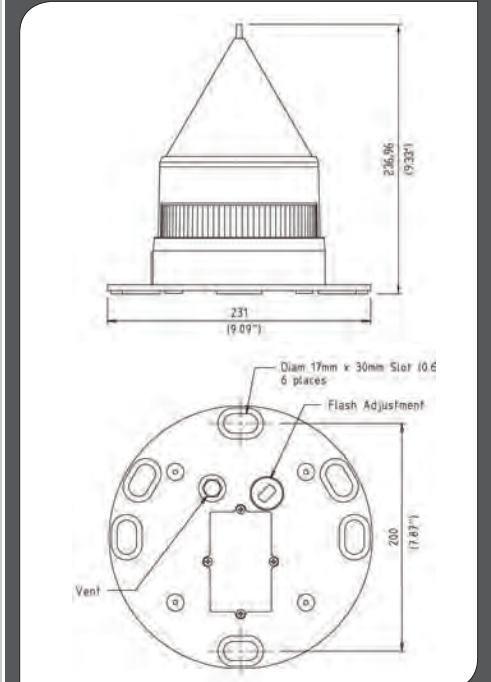
RF Controlled Compact Runway Edge Light

- 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 +7 degrees
- Made from durable UV stabilized LEXAN® polycarbonate
- Typical applications include; taxiway lighting, emergency airstrip and caution lighting
- Optional RF Control



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

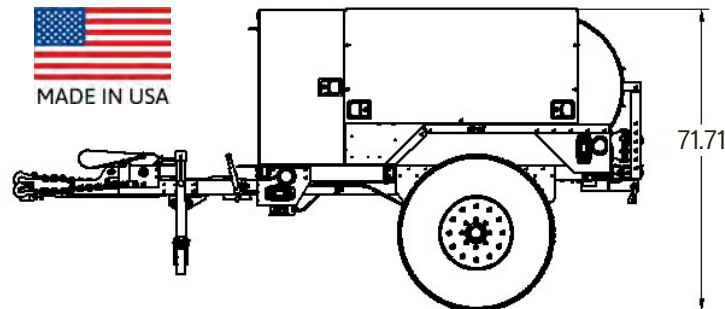
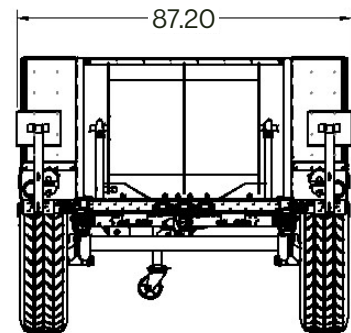
AV-HMALS Hardwired Airfield Lighting System



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 allows 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, torsion 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

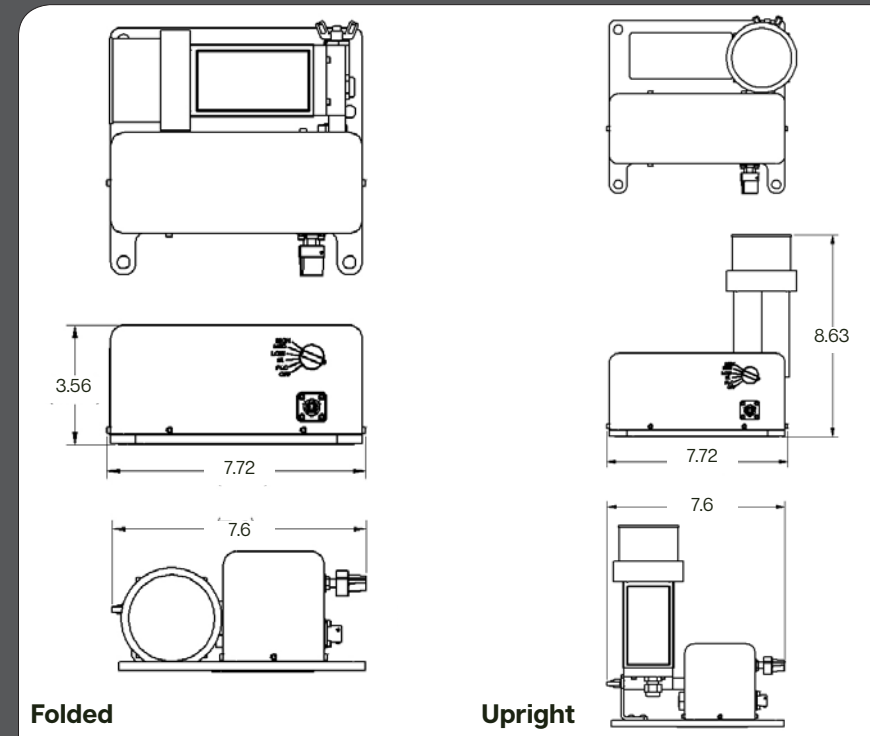
Optional

- 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

AV-HMALS Hardwired Airfield Lighting System

Medium Intensity Threshold And Runway Lights (AV-MIRL)

- FAA, ICAO and UFC Compliant Photometric and Chromaticity
- Three intensity steps High, Medium and Low
- High step of MIRL provides High Intensity Runway Light (HIRL) low step output (1000cd)
- Lightweight, portable and foldable for easy deployment and storage
- PLC remote control via low voltage power cables or local manual control at each light
- Integral battery for quick deployment and back-up in case of generator or cable failure
- IR mode standard
- Optional RF Control



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-461F certified
- IP65 certified sealed all-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 if 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

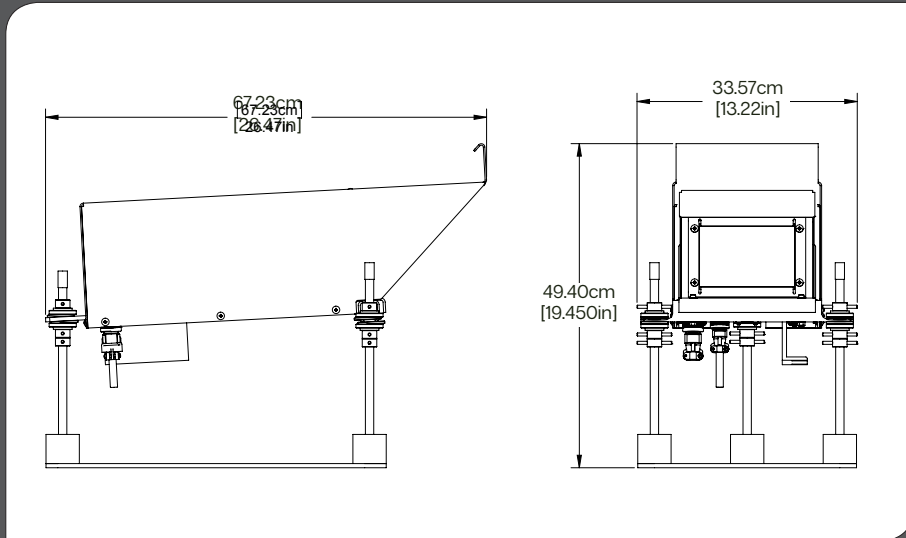
- 100 feet of rollover cable covers
- Tool Kit
- System Manuals
- Storage Box
- Optional Berry Amendment compliant cover

Precision Approach Path Indicator (PAPI)

- 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

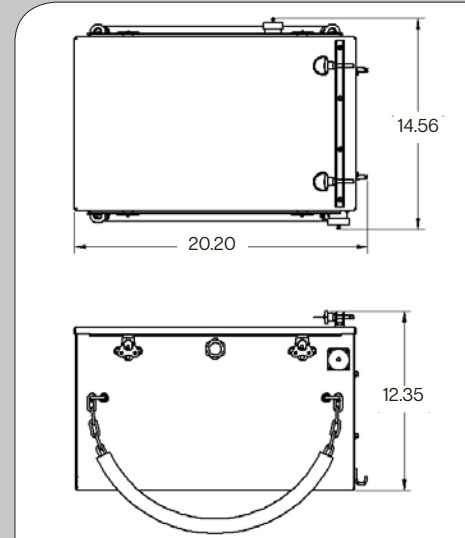
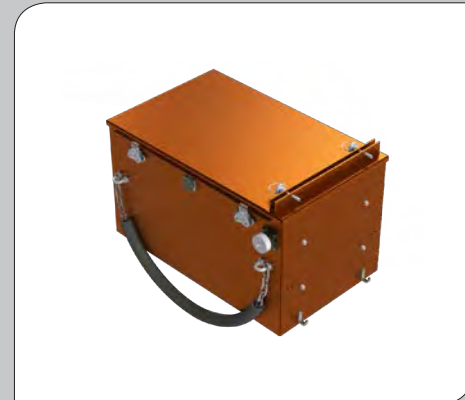


HMALS shown with optional PAPI and Onboard Generator



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



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



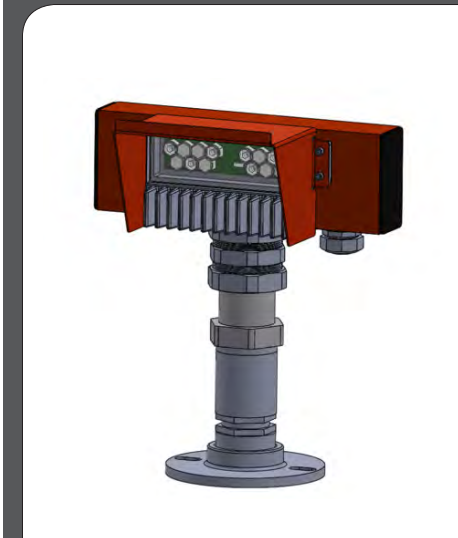
Short Simplified Expeditionary Approach Lighting System (SSEALS)

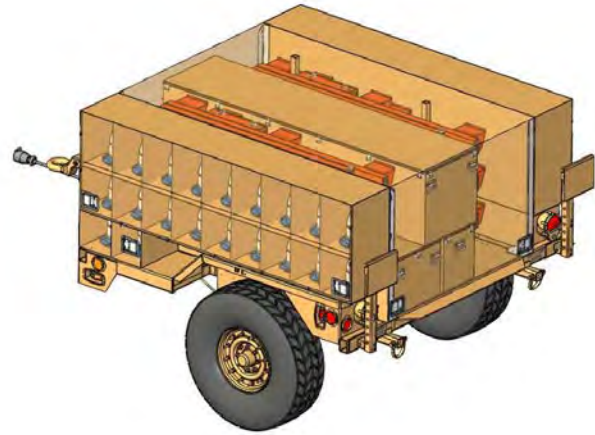
Steady Burning Light

- Runway Alignment Indicator Lights5 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

Sequenced Flashing Light

- Visual indication to pilots of the runway threshold during approach
- FAA L-849 (Photometric and Chromaticity)
- GPS synchronized lights w/ external antenna
- Synchronized identical address i.e. 1, flashing together with < 10 millisecond separation
- RF Control Installed in light head w/ external antenna
- 120 Flashes per Minute
- IR Optional

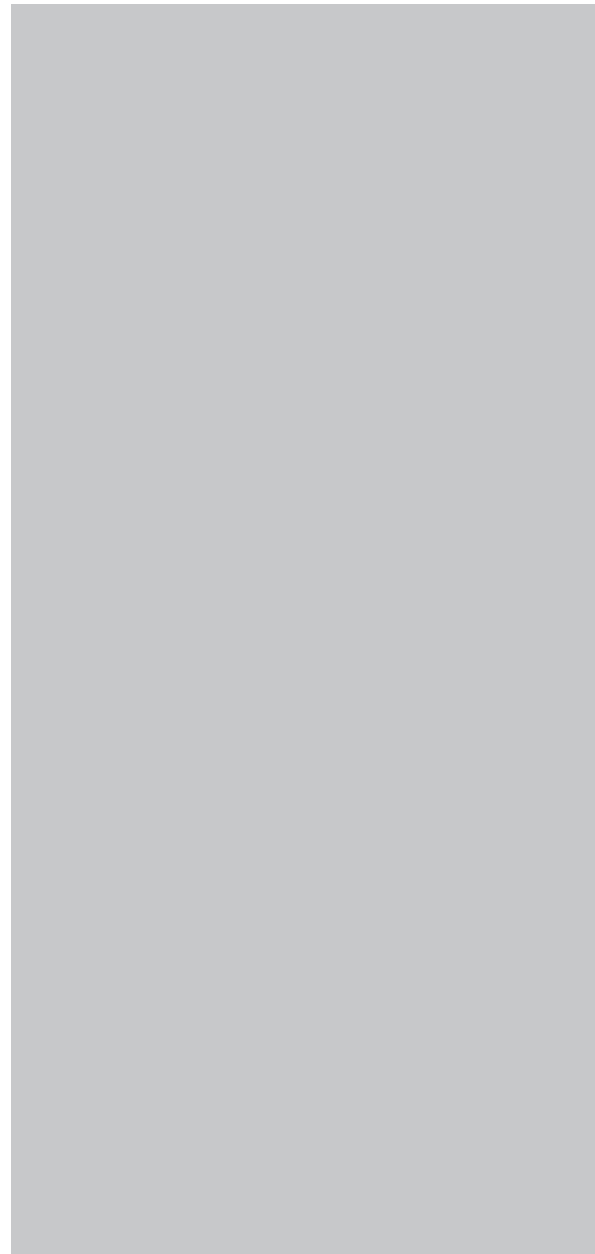
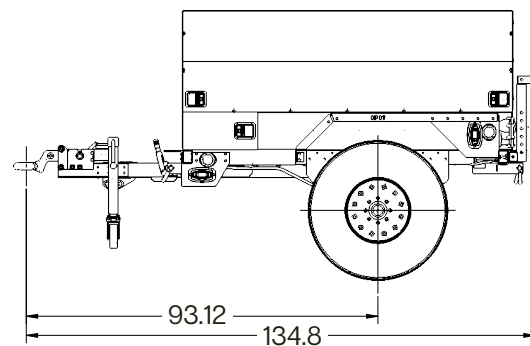
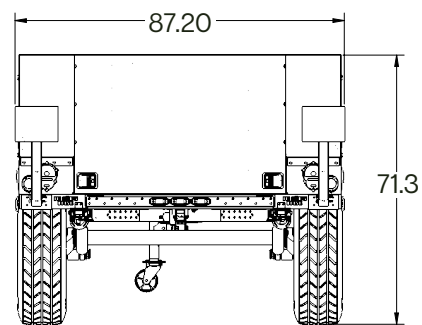




Medium Intensity Approach Lighting System with Runway Alignment - Sequenced Flashers

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.

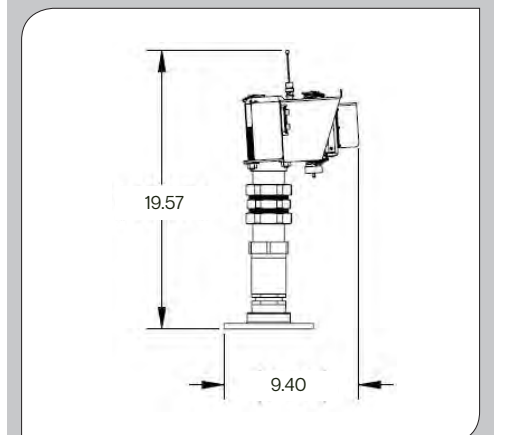
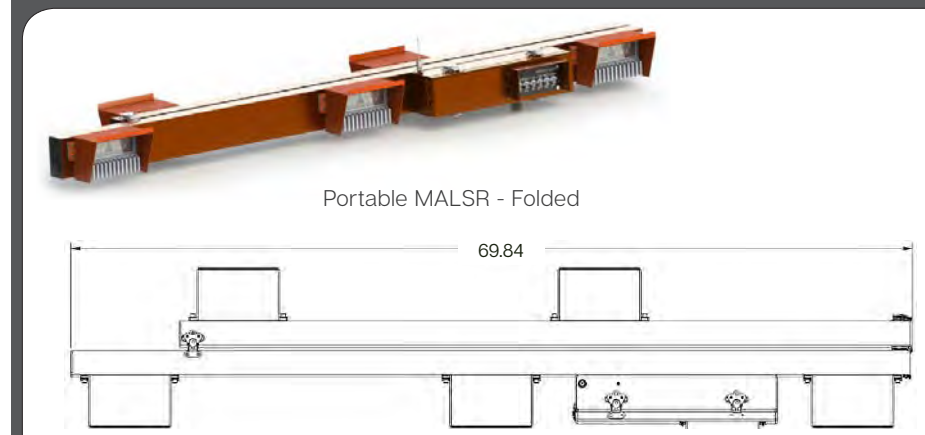
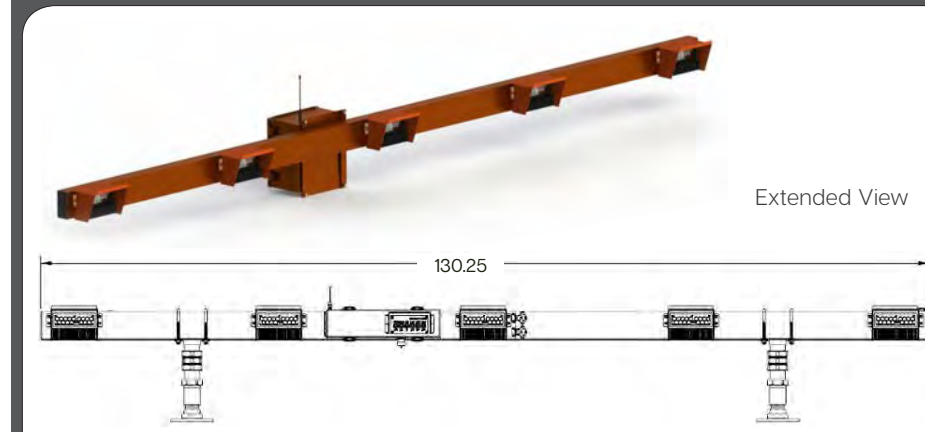


Medium Intensity Approach Lighting

- Approach lights provide visual guidance to arriving pilots of centerline and proper glideslope
- 9 Barrettes (each with 5 steady burning lights)
- FAA-E-2980 (Photometric and Chromaticity)
- First Solar LED MALSR to market
- RF or PLC Control
- VIS and VIS/IR offerings
- Available in orange or yellow
- Portable folding version

Steady Burning Light

- Runway Alignment Indicator Lights5 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



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.



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