

# EMERGENCY RESPONSE & EXPEDITIONARY SOLAR SAFETY LIGHTING PRODUCTS



**AIRFIELDS**



**BUILDING & ROADWAY  
OBSTRUCTION**



**MARINE**



**PERIMETER AND GENERAL  
AREA LIGHTING**

**Choose solar-powered solutions for rapid deployment of lighting.**



**carmanah®**

250 Bay Street  
Victoria, British Columbia  
V9A 3K5, Canada

[sales@carmanah.com](mailto:sales@carmanah.com)  
[carmanah.com](http://carmanah.com)

Toll-free: 1.877.722.8877  
Worldwide: 1.250.380.0052

# WHAT WE DO

For over 20 years, Carmanah has designed and built some of the most durable safety lighting products for some of the harshest environments around the world. We specialize in combining solar power, LED lights, and military-grade materials to produce self-sustaining, rapidly deployed lighting solutions that anyone can install—and that are guaranteed to last.



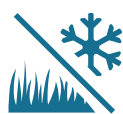
No specialized  
tools or  
installation team



Compact and  
portable



Adapts to any  
landscape



Guaranteed  
to perform in  
extreme weather



We've worked with hundreds of military and government agencies—from the US Coast Guard and NASA to nearly every branch of the US Armed Forces.



# AIRFIELD LIGHTING

PORTABLE RUNWAY, TAXIWAY, AND HELIPAD LIGHTING, INCLUDING A FULLY EQUIPPED EXPEDITIONARY TRAILER OR CONTAINER SYSTEM—AND OUT-OF-THE-BOX DEPLOYMENT.



**Maintenance free:** 100,000+ hours of LED runtime and 5–10 years of battery life.



**Hassle free:** uses solar power—no cables, no generators, and no external source of power.



**Air transportable:** US MIL-STD lift points. Designed to fit in CH-47, C-130, C-141, C-5, and V-22.



**IR/NVG Compatibility:** Standard infrared LEDs for night vision goggle compatibility.



**Rugged & Durable:** Lightweight aluminum construction.

Various mounts, built-in carry handle



Infrared output for NVG operations



Compact—under 14" installed

## RUNWAY & TAXIWAY LIGHTING

Lights are immediately operational and quickly relocated if required.

**Built to last for 20+ years—no maintenance for 7 years.**



## AIDS TO NAVIGATION AND CONTROLS

Tactical Precision Approach Path Indicators (PAPI) with IR/NVG capability.

Wireless control from miles away, secured using 256-bit military encryption.

Trailer charges lights via AC or solar while in storage



## TRAILER AND CONTAINER SYSTEMS

Three system packages sized for your runway length (**up to 112 lights on board**).

Includes trailer, lights, and controls



## PROJECT: BAGRAM AIRFIELD, AFGHANISTAN

Bagram Air Base has used Carmanah's lighting since 2003. The base has installed over 2,000 solar airfield lights, as well as solar signs, solar PAPI, solar wind cone, and deployable trailers. Our solar airfield lights come stock with both visible and infrared output, making them compatible with night vision goggles for covert operations.



## CHECK OUT THIS VIDEO:

Every few years, the Republic of Singapore Air Force (RSAF) conducts an Alternate Runway Exercise where they convert a public road into a temporary runway for aircraft takeoff and landing. As a part of the exercise, RSAF deploys Carmanah portable solar airfield lights every 200 feet to help guide pilots in poor visibility conditions.

<https://youtu.be/CBMD4QTSyqM>

# OBSTRUCTION LIGHTING

ENSURE BUILDINGS, EQUIPMENT, TEMPORARY ROADS, AND OTHER POTENTIAL HAZARDS ARE VISIBLE DAY AND NIGHT—WITH LIGHTWEIGHT, COMPACT, AND DURABLE SOLUTIONS.



**Maintenance free:** 100,000+ hours of LED runtime and 5–10 years of battery life.



**IR/NVG Compatibility:** Standard infrared LEDs for night vision goggle compatibility.



**Hassle free:** uses solar power—no cables, no generators, and no external source of power.



**Rugged & Durable:** MIL-STD for vibration and shock-proof construction. Premium grade, UV-resistant polycarbonate body.



**Configurable:** Simple steady-on activation or up to 250 flashing patterns and various mounting options.



Height: 12.9"  
Weight: 14 lbs

OL800























Height: 6.7"  
Weight: 3.5 lbs

OL4



Height: 2.2"  
Weight: 0.8 lbs

OL2A

COLORS	     	      	      
	32+ cd	10+ cd	8+ cd
	140 knots (72 m/s)	400 mph (180 m/s)	140 knots (72 m/s)

## CHECK OUT OUR EXTREME PRODUCT TESTING VIDEOS:

Our products are designed and tested to perform in the world's most challenging environments. Check out how our products withstand extreme tests.

<https://youtu.be/39wsol8zl3s>



# MARINE LIGHTING

SELF-CONTAINED LANTERNS SAFELY GUIDE BOATS AND SHIPS THROUGH WATERWAYS, PORTS, AND BEACH LANDING AREAS.



**Maintenance free:** 100,000+ hours of LED runtime and 5–10 years of battery life.



**Trusted:** Designed to Coast Guard requirements and used by maritime authorities worldwide.



**Hassle free:** Self-contained solar lanterns cover the range from 1 to 7+ NM.



**Light & Tough:** Rugged aluminum and UV-resistant polycarbonate body and lens material.



Height: 2.2"  
Weight: 0.8 lbs

**M550**



Height: 6.7"  
Weight: 3.5 lbs

**M650**



Height: 12.9"  
Weight: 14 lbs

**M860**

<b>RANGE</b>	1-3 NM	2-4 NM	4-7+ NM
	140 knots (72 m/s)	400 mph (180 m/s)	140 knots (72 m/s)



## PROJECT: VENICE CANAL

Waterways in Venice serve the function of roads, so the canals are used for transport. A new boathouse required additional lighting to clearly mark routes for vessels to ensure smooth traffic flow and to avoid potential collisions. Different colored lights along the route, including two access points to the inside of the parking area, helped mark the simultaneous arrival and departure of the vessels.

*"This was an interesting high-tempo project in a historically remarkable environment, the floating city of Venice. It took only a couple of months from the proposal to the installation phase and now the M650H lanterns have lightened up this winter and will continue many years to come."* – Marco Vavalà, Heliant Srl

Carmanah and its subsidiary Sabik Oy together are one of the largest marine ATON providers in the world.





# DISASTER RESPONSE LIGHTING STUDY: HURRICANE KATRINA

In August 2005, Hurricane Katrina struck the Gulf Coast of the United States, with 140 mph winds that caused an estimated \$100 billion in damage across Louisiana, Mississippi, and Alabama. Ultimately, the hurricane affected about 90,000 square miles of the US and killed nearly 2,000 people.

In the week after the storm hit, Carmanah received orders for more than 500 solar-powered LED lights spanning nearly all its lighting types to help rebuild facilities and restore services lost in the tragedy.



## MARINE NAVIGATION LIGHTS

The bulk of the orders were sent to the US Coast Guard in Mobile, Alabama, for distribution across the region. The lights were attached to buoys to restore direction in shipping channels.



## RAILWAY OBSTRUCTION LIGHTS

Railway bridges along a hard-hit 100-mile stretch between Pascagoula, Mississippi, and New Orleans, Louisiana, were outfitted with 100 obstruction lights.

### **FACT:**

*In order to meet the urgent demand for light, the company diverted all of its inventory and production to the hurricane region; its marine distributors worldwide volunteered to forego shipments until the orders for the hurricane zone could be filled.*

# HURRICANE KATRINA CONTINUED



## SECURITY LIGHTS

Louisiana's main emergency response and staging camp in Baton Rouge was outfitted with Sol security lighting systems. Sol employees installed the lights themselves, with components and labor paid through donations.



## TRAFFIC FLASHING BEACONS

In 2006, the Mississippi Department of Transportation ordered 8 solar-powered roadway flashers for trial purposes, since much of the electrical infrastructure was destroyed in the hurricane.

[carmanahtraffic.com](http://carmanahtraffic.com)



## AVIATION OBSTRUCTION LIGHTS

Aviation obstruction lights helped ensure safer transport of personnel and supplies at helicopter landing pads in the area.



# PERIMETER AND GENERAL AREA LIGHTING

ENSURE UNINTERRUPTED OPERATION AT NIGHT ACROSS STREETS AND COMMUNAL AREAS DURING BLACKOUTS OR SECURITY THREATS—WITHOUT COSTLY GENERATORS OR FUEL.



**Resilient Design:** Able to withstand 170 mph wind loads. Component box located at top of pole to deter copper theft.



**LEED Credit:** Light pollution reduction.



**Fast setup:** Minimize site disturbance and installation costs—no cable trenching required.



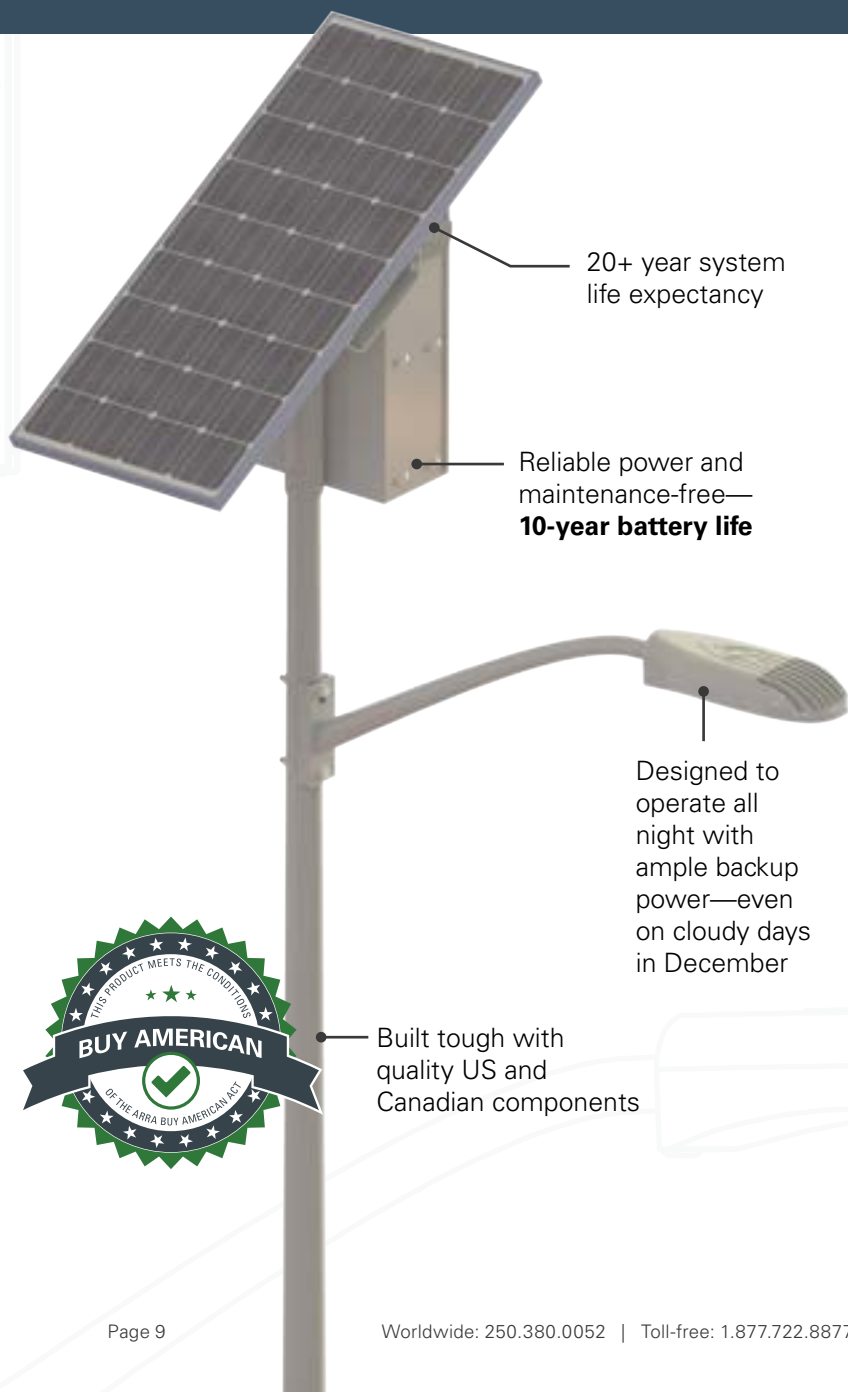
**Easy to install:** Setup requires no certified electrician and needs only two people with bucket trucks.



**Multi-terrain:** Works on environmentally sensitive or unstable ground conditions. Uses typical pole foundation.



**Smart Technology:** Features satellite remote monitoring for easy system performance reporting.



## SOLAR PERIMETER LIGHTING FOR NAS FALLON

NAS Fallon in Nevada required lighting for sub-stations and aircraft fuel stations that would be immune to power outages in case of security threats or blackouts. Sol, a subsidiary of Carmanah, provided systems uniquely configured to meet the mission-critical needs of a military operation.



# EARTHQUAKE RELIEF IN PERU

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In August 2007, an 8.0 magnitude earthquake hit Ica, a southern coastal province of Peru. The powerful earthquake killed over 400 people and injured another 1,500. In addition, more than 16,500 people were displaced or otherwise affected, with no access to power. In partnership with a pair of philanthropists and the local government, Sol was able to donate 42 solar lighting systems to support the affected areas.

The systems provided lighting for streets, pathways, and community squares thanks to their quick deployment, reliability, and ease of installation. Very little infrastructure improvement was required to install these lights, which extended the daily life of residents, who could keep their markets open longer and allow their children to play in a safer, more secure environment.

*"In addition to the lights being aesthetically pleasing, they also provide ample lighting and a sense of security for personnel being able to see their work area."* – Mark Kampmann, Chief Builder for the U.S. Naval Construction Maintenance Unit



**CHECK OUT OUR TESTIMONIAL VIDEO:**  
See what our customers are saying about our commercial lights.

<https://youtu.be/tvP5vjC4tvw>

# CARMANAH'S COMPLETE SOLAR LIGHTING SOLUTIONS

REPRESENTED BY:

Contact us today for more information on our comprehensive lighting solutions for disaster and emergency response.

