



The Contractor's Guide to Lighting U.S. Military Bases

How to accurately meet lighting specifications for military bases

Lighting plays a key role in ensuring the mission-readiness, safety and security of our nation's military bases, so military stakeholders take it very seriously. As any prime or electrical contractor knows, this is evidenced from the long list of lighting requirements and standards that accompany military work.

If you are a prime or electrical contractor bidding or performing work for the Department of Defense, this quick-start guide provides an overview of critical considerations for military base lighting. It also provides help for choosing lighting experts or partners that save you from the headaches of costly delays and exclusion from future military projects. Most importantly, it gives you a clearer idea of critical – sometimes unwritten – expectations and priorities that the military has:

Key Priorities for Military Base Lighting

From the Army to the Navy, Air Force and National Guard, the following priorities should be considered when preparing proposals for base or facility construction, or lighting upgrade projects.



BAA Compliance

Lights and equipment must be American-made and sourced, as stipulated under the Buy American Act (BAA), to protect a robust domestic defense industry and ensure mission continuity during a crisis. Failure to meet this standard can result in debarment or other actions taken against contractors.



Past Performance

The military favors lighting equipment from manufacturers that have a past installation history with the federal government. Consistency with current operations and maintenance or repair practices can give a leg up when bidding products familiar to the customer, particularly if those products have a record of success.



Compliance with Technical Standards

Lighting must comply with specifics such as minimum lighting levels, measured in foot-candles, and glare considerations as referenced in Unified Facility Criteria (UFC) standards compiled by the Department of Defense. The U.S. Army Corps of Engineers (USACE) is also heavily involved in specifying design, safety and quality criteria. Compliance with U.S. electrical standards – such as UL1598 – that ensure electrically safe products is also a requirement, even for U.S. bases overseas.



Quality Product

Military contract holders often require warranty periods upwards of 5 to 10 years on lighting fixtures. Ensuring lights are made of quality components by an established lighting manufacturer following a quality management system helps reduce or eliminate unnecessary warranty repairs.



Complete Set of Solutions

Due to tight deadlines and huge project scopes, the military often requires contractors to offer them a full range of lighting solutions – from customized light fixtures to high-mast pole installation, mounting hardware and lighting controls.



Lighting Calculations

In order to validate a lighting proposal, lighting calculations help demonstrate the illumination levels on the ground and how many lights are needed to accomplish the specification. Incorporating the correct Light Loss Factor (LLF), or expected light depreciation from the fixture over time due to LED degradation and dirt on the lens, is a key part of the design process. Some lighting manufacturers offer lighting calculations as a complimentary service, while others may charge a fee.



Levels of Redundancy

Lights and equipment must be durable enough for military use, incorporate fail-safes and seamlessly integrate with existing military infrastructure. For example, even if the lighting controller fails, lights must still be able to be turned on and off manually.



Ease of Operation and Maintenance

Rotating base personnel must be able to intuitively learn, operate and maintain lighting systems and wireless lighting controls within a short time. Designing a maintenance-free lighting system is often the best cost and time-saving strategy.

Key Priorities for Military Base Lighting

The military's main lighting priorities can be broken down into greater detail. When devising complete lighting solutions for military bases, take into account these considerations:

 <p>SOURCING LIGHTS</p> <p>To deliver to military expectations, ensure LEDs meet these baselines</p>	Are the lights Buy American Act (BAA) certified?
	Are the lights engineered for military-grade durability?
	Do the lights have the right optics to reduce glare?
	Can the angle of the lights be adjusted to provide illumination wherever needed?
	Has the manufacturer of these lights been in business for over 5 years, with a proven record for performance?
	Are the lead times for procuring the lights reasonable for the project?
 <p>PLANNING AND INSTALLATION</p> <p>Consider every aspect of installation to minimize delays and overrun costs</p>	Do you know the number of lights needed to meet specified lighting requirements?
	Do you know the number of lights needed to form an accurately priced bid?
	Can the lights be powered by existing infrastructure or does new wiring, sockets and poles need to be installed?
	Do the lights have mounting options that aid retrofits?
	Do you need equipment, like man-lifts, and expertise to install or retrofit lights?
 <p>COMPLIANCE WITH STANDARDS</p> <p>Military customers often require lights to comply with these established standards</p>	Lights comply with UL standards for exterior lighting
	Lights comply with specified Unified Facility Certification (UFC) military lighting performance requirements
	Lights meet the safety standards by the UL Standards Body (UL1598, UL1598A, UL844) for military applications

For contractors focused on delivering an entire project on time and on budget, it can be overwhelming to carefully check and comply with each of these lighting requirements. To reduce the burden and free your resources for the project, consider looking for a lighting partner with extensive experience in lighting federal and military infrastructure.

The Alternative: Work with An Experienced Lighting Partner

Lighting military bases does not need to be complicated – working with an experienced lighting partner helps keep the process smooth, ensuring on-time completion. Consider engaging a lighting partner to focus on the lighting component of your project, so you can focus on delivering quality construction work and building trust with U.S. military stakeholders. Good lighting partners should provide any of the key values below:

	What You May Face	What to Expect from Lighting Experts
BAA Certification	It's tough to find BAA-certified lights and equipment in the market	Have BAA compliant product, manufactured on American soil
Compliance with Standards	These lighting standards and codes are time-consuming to understand	Thoroughly understand UFC, IES and UL Standards
Attention to Lighting Details	It's easy to underestimate or overlook lighting details, causing us to underbid and incur later costs	Shed light into every small lighting detail, from needed wiring length to quantity of lights, giving you enough information to form accurate bids and budgets
Lighting Simulations	The project requires lighting simulations but I don't have the required software	Provide you with an accurate, easy-to-read lighting calculation to share with your customer
Full Turnkey Solutions	It's a pain to create a complete lighting solution that satisfactorily matches the bid's requirements	Partner with you to create a complete lighting solution, from lighting layout designs to the selection of lights and poles
World-Class Customer Support	There's very little customer support for the project, if any at all	Have a stake in your project's success. Ideally, they should send their lighting experts on-site to assess and assist you throughout the project



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Flexibility for Modifications	Off-the-shelf lighting solutions can't meet the project's specifications	Be able to provide flexible and direct support with minor modifications, like drilling additional mounting points or changing fixture lenses for required brightness levels
Short Lead Times	Lights and equipment take months to arrive, putting the project's deadline at risk	Preferably have lead times that are between 4 to 8 weeks, instead of the industry average of 12 to 18 weeks
Long-Term Support	The military expects warranty support years after the project's completion	Be established enough to provide support 3 to 10 years and beyond after the initial sale

Not every lighting solution's vendor can provide these values. Only those that have decades of experience and own the manufacturing process, like Phoenix Lighting, have the expertise to keep the lighting requirements of your project within budget and expectations – while being easy and knowledgeable enough to work with.

Bringing Lighting Quality, Durability and Accuracy to Your Project

Based in Milwaukee, Wisconsin, Phoenix Lighting has a 50-year track record of delivering successful lighting results for government and military lighting projects. Our experience has given us an expert's understanding of what truly matters for military base lighting. When you partner with us, we'll ensure your lighting budget is efficiently utilized and that your construction project meets your customer's needs.

Our areas of lighting expertise include:

✓	Apron Lighting
✓	Hangar Lighting
✓	Light Tower Retrofits
✓	Perimeter and Security Lighting
✓	Marine Lighting
✓	High Mast Lighting
✓	Overhead and Portal Crane Lighting
✓	DC Voltage Lighting (equipment)
✓	Hazardous and Explosion-proof Location Lighting
✓	Dry Dock Lighting



[Download our Capabilities Statement here.](#)

Case Study: Avon Park Air Force Base



The airbase was building a new ramp adjacent to an AC-130 gunship fueling hangar. Well-engineered and safe lighting for this ramp was mission-critical, as ground crews needed the right level of illumination when rapidly rearming and refueling aircraft.

Working closely with the USACE, our Phoenix experts determined that 32 units of Highland 500 High Mast & Area LED floodlights, mounted on 4 high mast poles and connected with wireless controls was optimum. We supplied all the equipment, including the poles. The downward-focused orientation of our Highland fixtures provided great levels of light across a wide area, while minimizing glare for incoming aircraft – both benefits that the USACE and airbase officials were well satisfied with.

Our other critical projects:

Marine	Infrastructure
USNS Comfort	Hanger Retrofit Dover AFB
USNS Spearhead	Munitions Hanger, Misawa AFB
USCG Cutter Class	Apron lighting, Hurlburt AFB

Ready to partner with us and bring your military base lighting project to the next level?

[Tell us about your project here and let's get started.](#)

