



# SAE ARP6336™ RECOMMENDED PRACTICE

LIGHTING APPLICATIONS FOR UNMANNED  
AIRCRAFT SYSTEMS (UAS)

This standard, ARP6336 Lighting Applications for Unmanned Aircraft Systems (UAS), describes the functions and characteristics of lighting design for the Unmanned Aircraft operating as a system with the GCS. The C3 interface for controlling the UA lighting will be briefly mentioned and some areas of covert lighting are discussed along with lighting for ground operations.

An unmanned aircraft is a device that is used for flight with no onboard pilot. These devices may be as simple as a Radio Controlled (RC) model aircraft or as complex as a DoD surveillance aircraft flying over hostile areas in warfare. All are controlled by a data link to connect the pilot to the aircraft via a Ground Control Station (GCS). Unmanned aircraft range in size from wingspans of 6 inches to a several hundred feet and weigh from 4 ounces to over 25000 pounds. The collective components for operating these devices are called an Unmanned Aircraft System (UAS). The three things all UASs have in common are:

- The Unmanned Aircraft System (UAS), often referred to as Unmanned Air Vehicle (UAS)
- The Ground Control Station (GCS) and Pilot
- The data link software for the Command and Control (C3) between the GCS and aircraft

This document provides technical recommendations for the lighting applications for Unmanned Aircraft Systems (UAS) and discusses the unique trade-offs that are necessary to maintain commonality to the U.S. Federal Aviation Regulations (FARs) for aerospace lighting.

The recommendations set forth in this document are to aid in the design of Unmanned Aircraft (UA) lighting for the size of aircraft and operation for which the aircraft is intended.



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The **SAE A-20 Aircraft Lighting** committee addresses all facets of aircraft lighting equipment- design, manufacture, operation, maintenance, and in-service experience. It is responsible for standards pertaining to aircraft lighting and lighting emission sources which will fulfill the needs and requirements of operational control and utility, including all lighting on and in an aircraft and under its control. The group is comprised of three committees dedicated to creating, preparing, and maintaining all relevant specifications, standards, and requirements for aircraft lighting systems. These committees include:

**A-20A** Crew Station Lighting

**A-20B** Exterior Lighting

**A-20C** Interior Lighting

Additional committees involved with unmanned aircraft standards include: **AS-4JAUS, AS-4UCS, E-39, and G-30.**

#### **Additional Standards from Vehicle Architecture for Data Communications Standards**

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Position and Anticollision Lights - Fixed-Wing Aircraft

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Your participation would be a welcome addition to the A-20B Exterior Lighting Standards Committee. The SAE standards consensus process needs active participation from leaders and experts across the industry. If you are a professional in the mobility industry, we welcome your participation.

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