



AEROSPACE STANDARD

AS8017™**REV. D**

Issued 1978-01
Revised 2017-08
Reaffirmed 2025-09

Superseding AS8017C

Minimum Performance Standard for Anticollision Light Systems

RATIONALE

This document establishes minimum performance levels for aircraft anticollision light systems including chromaticity and light intensity in support of TSO and system certifications. Information contained herein has been expanded from AS8017C in the areas of measurement orientation, color specifications, qualification criteria and added figures for clarity. Further information has also been added regarding the use of Light Emitting Diode (LED) technology in the areas of effective intensity, flash frequency and continued airworthiness.

AS8017D has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Aerospace Standard (AS) establishes minimum performance standards for new equipment anticollision light systems.

This Aerospace Standard defines minimum light intensity in terms of "effective intensity" as defined in paragraph 3.5 of this standard and specified vertical and horizontal directions about the longitudinal and vertical axis of the airplane. It will also define flash rate and color for the anticollision light system. It is not intended that this standard require the use of any particular light source such as Xenon, LED or any other specific design of lamp.

1.1 The anticollision light system will consist of all components necessary to produce the required intensity distribution, flash rate, etc. about the airplane. It may consist of one or more lighting units mounted in various places on the airplane such as top and bottom fuselage, vertical fin, tail cone, wing tips, or other location. Timing devices or power supplies necessary for proper operation of the anticollision light system will also be considered as part of the system.

1.2 The anticollision light system will meet the minimum performance standards for one of the following classes:

Aircraft Type	Effective Intensity
Class I - Rotorcraft	150 Candelas
Class II - Fixed Wing Aircraft	400 Candelas
Class III - Fixed Wing Aircraft and Rotorcraft	100 Candelas

1.2.1 It is necessary to establish these classes in order to define performance standards for lights as required by FARs.

Amendment 27-10 of FAR 27 and 29-11 of FAR 29 established minimum intensity requirements for Rotorcraft as listed for Class I lights. Generally, all rotorcraft certificated prior to these amendments must meet requirements of Class III lights.

Anticollision lights for fixed wing aircraft must meet requirements for Class III lights if certificated prior to August 11, 1971 and the requirements for Class II lights if certificated after that date.

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2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AIR5689	Light Transmitting Glass Covers for Exterior Aircraft Lighting
ARP5029	Measurement Procedures for Strobe Anticollision Lights
ARP991	Position and Anticollision Lights - Turbine Powered Fixed-Wing Aircraft
ARP5414	Aircraft Lightning Zoning
ARP5637	Design and Maintenance Considerations for Aircraft Exterior Lighting Plastic Lenses
ARP6161	Flight Compartment Glare
ARP6253	LEDs and Aircraft Applications
AS25050	Colors, Aeronautical Lights and Lighting Equipment, General Requirements For
J1330	Photometer Laboratory Accuracy Guidelines

2.2 RTCA Publications

Available from RTCA, Inc., 1150 18th Street, NW, Suite 910, Washington, DC 20036, Tel: 202-833-9339, www.rtca.org.

DO-160	Radio Technical Commission for Aeronautics (RTCA), Environmental Conditions and Test Procedures for Airborne Equipment (latest applicable revision).
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2.3 U.S. Military Specifications and Standards

Copies of these documents are available at <http://quicksearch.dla.mil>.

MIL-DTL-7989 Covers, Light-Transmitting, for Aeronautical Lights, General Specification for

2.4 Other Publications

Code of Federal Regulations Title 14, Part 23, 25, 27, 29. Some applicable sections may include, but are not limited to the following:

§2-.1397 Color Specifications

§2-.1401 Anticollision Light System

25.1701 – 25.1729 Electrical Wiring Interconnection Systems (EWIS)

Department of Transportation, Federal Aviation Administration, Aircraft Certification Service, Washington, DC

TSO-C96 Technical Standard Order, Anticollision Light Systems

AC 20-30 Advisory Circular, Aircraft Position Light and Anticollision Light Installations

AC 20-74 Advisory Circular, Aircraft Position and Anticollision Light Measurements

3. GENERAL STANDARDS

3.1 Class I - Rotorcraft - 150 Candelas

3.1.1 Color: Each light in the system will produce light having an Aviation Red color as defined in Section 3.4.

3.1.2 Minimum Effective Intensity: The system must provide effective intensity equal to or exceeding the values shown in Figure 1 for any vertical plane (intensities are per 14 CFR Part 27 & 29 § 2-.1401):

Angle above or below the horizontal plane	Effective Intensity (Candelas)
0 - 5 degrees	150
5 - 10 degrees	90
10 - 20 degrees	30
20 - 30 degrees	15

Figure 1 - Minimum intensities in any vertical plane, Class I anticollision lights

3.1.3 Flash Rate

Each light in the system must produce an effective flash frequency of not less than 40 or more than 100 flashes per minute.

3.2 Class II - Fixed Wing Aircraft - 400 Candelas

3.2.1 Color

The anticollision light system must produce lighting having either an Aviation Red color and/or an Aviation White color as defined in Section 3.4.

3.2.2 Minimum Effective Intensity

The system must provide effective intensity equal to or exceeding the values shown in Figure 2 for any vertical plane(intensities are per 14 CFR Part 23 & 25 § 2-.1401):

Angle above or below the horizontal plane	Effective Intensity (Candelas)
0 - 5 degrees	400
5 - 10 degrees	240
10 - 20 degrees	80
20 - 30 degrees	40
30 - 75 degrees	20

Figure 2 - Minimum intensities in any vertical plane, Class II anticollision lights

3.2.3 Flash Rate

Each light in the system must produce an effective flash frequency of not less than 40 or more than 100 flashes per minute.

3.3 Class III - Fixed Wing Aircraft and Rotorcraft - 100 Candelas:

3.3.1 Color

The anticollision light system must produce light having either an Aviation Red color and/or an Aviation White color as defined in 3.4.

3.3.2 Minimum Effective Intensity

The system must provide effective intensity equal to or exceeding the values shown in Figure 3 for any vertical plane:

Angle above or below the horizontal plane	Effective Intensity (Candelas)
0° - 5°	100
5° - 10°	60
10° - 20°	20
20° - 30°	10

Figure 3 - Minimum intensities in any vertical plane, Class III anticollision lights

3.3.3 Flash Rate

Each light in the system must provide an effective flash frequency of not less than 40 nor more than 100 flashes per minute.

3.4 Color Specifications

Color Specifications: Each anticollision light must have the (CIE 1931, 2 degrees observer) International Commission on Illumination chromaticity coordinates preferably as per CFR, or per alternate color definitions reported in Section 3.4.1. Caution: compliance only to the alternate color definitions detailed in Section 3.4.1 (without compliance to the CFR requirements) will require an Equivalent Level of Safety Finding by the Federal Aviation Administration in order to allow installation of the lights on certified aircraft.