

Lighting Regulations

Light Requirements, Locations, & Distribution Patterns

All aircraft must have an approved anti-collision light and position light system for nighttime operations. The position lights consist of an Aviation Red on the left side, an Aviation Green on the right and an Aviation White Taillight (REF. FAR 23.1389).

The anti-collision lighting system is required under FAR PART 91.205(c). There are different requirements affecting different aircraft. These aircraft are categorized by the date of application for type certificate. Home built aircraft are determined by the date of issuance of the Experimental Operating Limitations. The different categories are as follows:

Aircraft for which type certificate was applied for After April 1, 1957 to August 10, 1971:

These anti-collision systems must produce a minimum of 100 effective candela in Aviation Red or White (REF. FAR 23.1397), 360° around the aircraft's vertical axis, 30° above and below the horizontal plane (REF. FAR 23.1401).

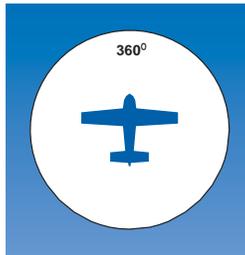
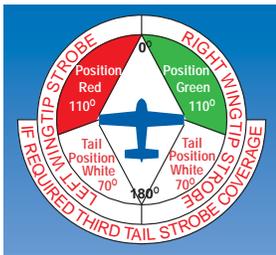
Aircraft for which type certificate was applied for After August 11, 1971 to July 18, 1977:

These anti-collision systems must produce a minimum of 400 effective candela in Aviation Red or White (REF. FAR 23.1397), 360° around the aircraft's vertical axis, 30° above and below the horizontal plane (REF. FAR 23.1401).

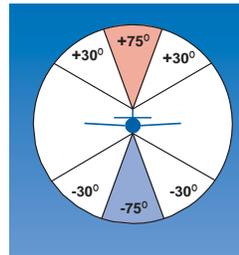
Aircraft for which type certificate was applied for After July 18, 1977:

These anti-collision systems must produce a minimum of 400 effective candela in Aviation Red or White (REF. FAR 23.1397), 360° around the aircraft's vertical axis, 75° above and below the horizontal plane (REF. FAR 23.1401).

Note: The position lights must be wired independently of anti-collision lights.



An approved anti-collision strobe light system must project light 360° around the aircraft's vertical axis. One or more strobe lights can be used.



An approved anti-collision strobe light system must project light + or - 30° above and below the horizontal plane of the aircraft. One or more strobe lights can be used. The + or - 75° projected light is required since July 18, 1977.

Lighting Installation Locations

Wingtip: The major difference in systems is the location of the strobe power supplies which can be mounted locally, one in each wingtip, or a single power supply can be mounted in the fuselage. Installation time can be greatly reduced if done in conjunction with an annual or one hundred-hour inspection. Properly installed power supplies and cabling are necessary for the safe operation of Whelen or any light systems.

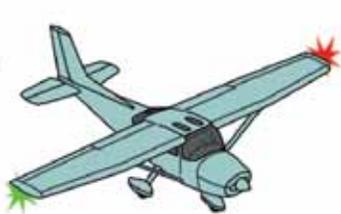
Fuselage: Fuselage mounted units can be either self-contained with the power supply and lighthouse as one unit, or remote lighthouses run off a separate power supply. To meet the field of coverage, one must be on the top of the fuselage and one on the bottom.

Vertical Fin: Finally, if applicable, a single anti-collision light can be mounted on the vertical stabilizer. It can be either a self-contained or remote lighthouse depending on the aircraft.



VERTICAL FIN

One anti-collision strobe light mounted on the vertical fin will meet the minimum requirements on most aircraft. A half red and half white lens is recommended.



WINGTIP

Two wingtip strobe lights that protrude beyond the wingtip.



ENCLOSED WINGTIP

Enclosed wingtip anti-collision strobe lights, require a third strobe light on the tail or vertical fin, to fill in the required light envelope. This is an approved anti-collision system.



FUSELAGE

In a fuselage mounted anti-collision strobe light system, a minimum of two strobe lights are necessary to get the required vertical coverage. This is an approved anti-collision system.

Lighting Technologies

Lighting Technology Glossary

Halogen Lamp: A halogen lamp is an incandescent lamp with a tungsten filament contained within an inert gas.



Strobe Tube: Strobe light consist of a tube containing an inert gas, such as Xenon. Capacitors inside the light are charged up to a relatively high voltage, roughly 300 volts for small strobes, then discharged via a trigger to create a bright burst of light.



LED: LEDs are solid state devices and are subject to very limited wear and tear if operated at low currents and low temperatures. A square wavelength creates higher visibility with longer on time.



NOTE: All non-FAA approved parts in this catalog are signified by a (—) in the approval column. Parts without FAA approval may still be purchased, however, installation of these parts on U. S. Type Certificated products will require additional FAA approvals.