



## Mounting instruction for anti collision light (ACL-UAV-12V) Electronic Anti Collision Light for ultra-light aircraft

### Dear customer,

the electronic anti collision light ACL-UAV-12V is a highly innovative product which contributes to safer airspace.

The new LED technology allows an incredibly excellent, red light with only approx. 10% of the input power compared with conventional lights. The casting in a high-optical plastic makes the ACL absolutely insensitive against water, vibrations and other environmental influence. The efficiency of the output is much higher, than with conventional electric light bulbs. The self-warming of the ACL is low and can be determined as safe. To avoid overheating, the heat balance is controlled electronically.

The ACL-UAV-12V has additionally a serial FLARM-Interface. With this interface (19.200 Baud, 8 Bit, No Parity, 1 Stop-Bit) a Power-FLARM unit can send the emergency level (0-3) and thus control the action replay of the ACL. **Important:** connect the shielding of the cable only at the ground of the Power-FLARM to avoid buzz loops and therefore interferences.

In addition, the ACL-UAV-12V has a remote control input and can be switched on and off by a radio control unit with a pulse length of 1-2 msec or by potential free contacts (Relay).

This anti collision light for ultra light aircraft is designed to be mounted at a suitable position at the tail unit or at the top of the stabilizer. Please adhere to the following instructions for a professional mounting of the ACL. The illumination angle complies to the regulations for general aviation.

### Required materials and tools

- 3-core twisted cord, according to the length of fuselage (5 - 8 meters)
- 1 shielded wire for Flarm-Interface
- colored silicone
- 2 screws, approx. Ø 4 mm x 30 - 35-mm length
- soldering iron, tin solder
- shrink hose (enclosed)

### Recommendations

#### Cable

We recommend a tripple core, flexible and twisted cable with a cross section of at least 1.0 mm<sup>2</sup> and minimum 0,25 mm<sup>2</sup> for remote control. In case of doubt, you can order the suitable cable from Thiesen Electronics GmbH. Use a single-wire shielded cable for the FLARM-Interface.

#### Adhesion

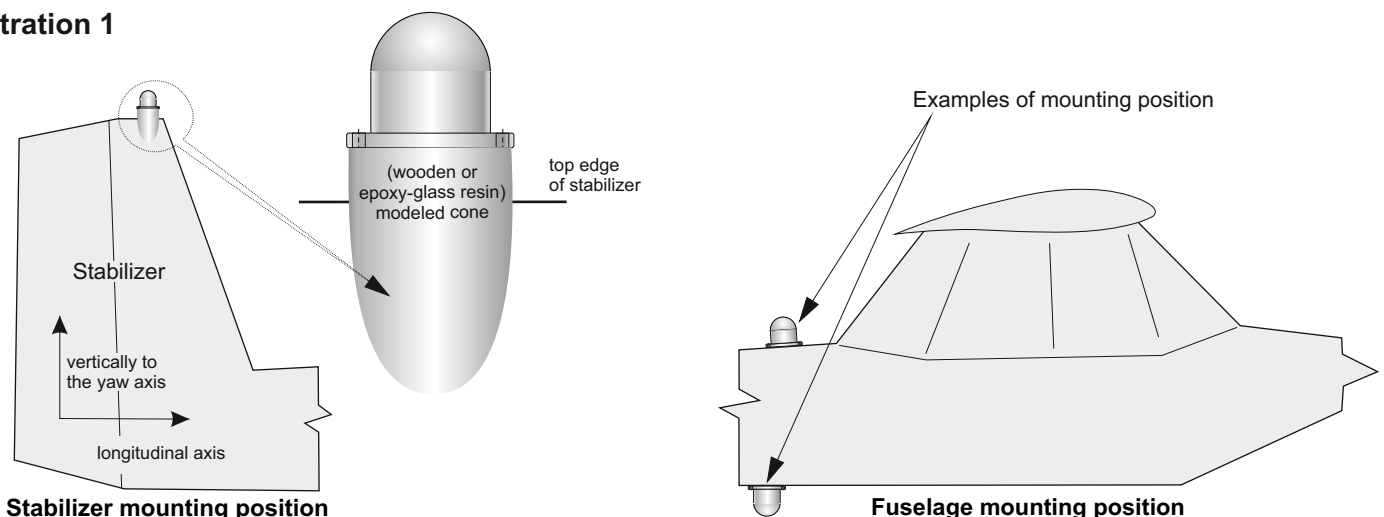
We recommend standard silicon in a tube. It is available in do-it-yourself markets. This adhesion is strong and in case of a dismantling you only need a sharp knife. We strongly advise against using other kinds of adhesion, like polyester or epoxy resin.

#### Mounting

Use 2 metal screws (Ø 4 mm x 30 - 35 mm) to fix the ACL and a thin layer of silicon to paste it to the required position. By the use of silicon twisting of the ACL is prevented and sealing against dirt and water is guaranteed. **Use only screws that do not corrode!** Use metric screws, e. g. M4 with needed length for mounting with clinch nut or clamping nut. The ACL must be mounted parallel to the longitudinal axis and vertically to the yaw axis of the aircraft (see illustration 1).

Mark the mounting position exactly. Clean and degrease the mounting position with grain alcohol or low aggressive thinner. The adherend should be free from grease and free from polish. Drill 3 holes - two holes for the attachment screw (e.g. Ø

### Illustration 1

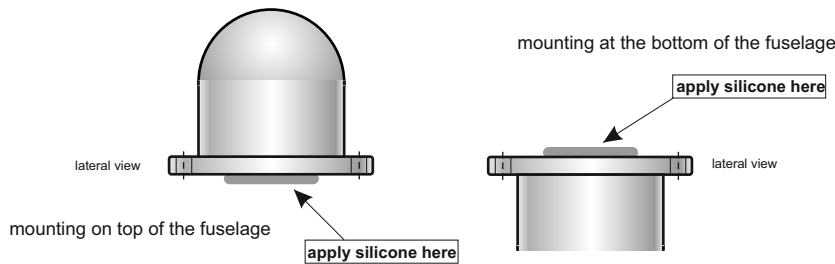


## Pasting

Apply only as much silicone as required to paste the ACL plane (see illustration 2). After fixing the ACL to the required position, slightly tighten the screw. With your moistened finger using dish liquid clean off any laterally dispensable silicone, a smooth transition can be modeled between the wing and the ACL.

Silicone needs time to cure (vaporization of acetic acid). The best results are achieved at a temperature of 20° Celsius (68° Fahrenheit). Just follow the handling instructions of the silicone. The final firmness (stability) will be reached after a few days.

## Illustration 2



## Electric power supply / cable connection to the aircraft system (12 Volts)

The best connection is solder with additional shrinking of the soldering joint with a shrink hose (enclosed). Only use solder for electronic soldering never use cored solder. It contains acids which cause corrosion!

## Important notes

Carefully mount the cables inside the rudder and/or the fuselage. Connect the cables professionally to the aircraft system (**red = positive, black = negative, blue = radio control, green = FLARM**) and to a 5 Amps fuse protection. Luster terminals are not suitable to connect cables. There is a good selection of suitable crimp connections in various shops.

## Servicing / maintenance

For additional UV protection, use varnish. Should the ACL be scratched, use a good polish to refurbish the damages. With slightly deeper scratches use wet sandpaper with very fine granulation (800-1000) carefully polish again. Do not use aggressive chemicals like gasoline or solvent.

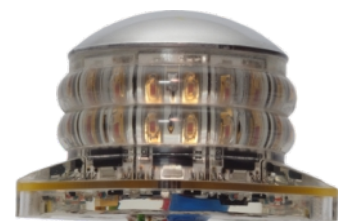
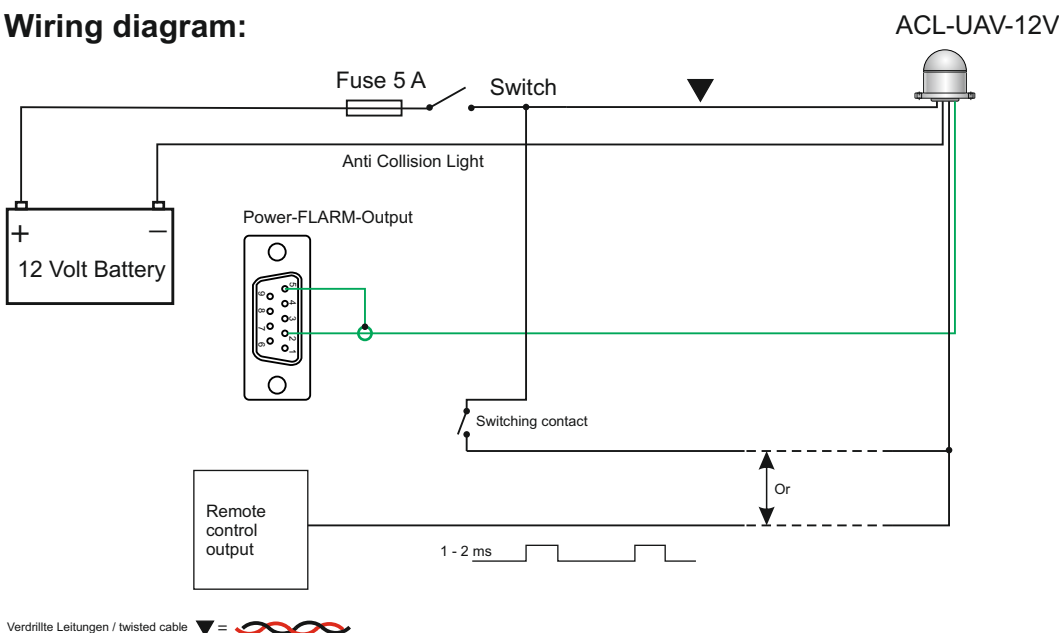
### For day to day cleaning use soap water!

Some insect removers and detergents forces embrittlement of epoxy based plastics and laminates. Use only aircraft certified products. **If the aircraft can not hangarized, please cover the lamps to prevent surface aging!**

## Technical data

Operating voltage: 10-17 volts (DC), typically 12.8 - 13.4 volts  
Input : approx. 8 watts  
Fuse : 5 ampere (fusible cut-out or automatic fuse)  
Dimensions : 61 x 44 x 39 mms  
Drill hole : 4.5 mm  
Weight : approx. 85 grams with connecting cables  
Warranty : 5,000 operating hours or max. 3 years

## Wiring diagram:



**5.000 hours or max. 3 years  
assured luminous duration**

**Made in Germany**

Verdrillte Leitungen / twisted cable ▼ =