



INSTALLATION MANUAL

SuperNova Titania

AVE-SNA-IM

Initial Issue
Valid from 01 August 2017

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Part 1 Installation data

1.1 *SuperNova Titania*™

SuperNova Titania™ is a dual color anti-collision light system. It provides either white and red or white and infrared strobe light per ETSO standards.

The *SuperNova Titania*™ light is a high powered LED lighting system intended for use in general aviation aircraft certified according FAR/CS 23, 25, 27 and 29. It is designed to be lightweight and with low power consumption in order to meet the requirements of various aircraft.

The light is available in two operation modes.

- SuperNova Titania **White/Red strobe**
- SuperNova Titania **White/Infrared strobe**

A key feature of the SuperNova Titania lights is that they are completely self-contained and require only a standard DC supply. No external high voltage generator and no external strobe flasher unit is needed.



Figure 01: Features of *SuperNova Titania*™



Figure 02: **SuperNova Titania™**



Figure 03: **SuperNova Titania™ White/Red** anti-collision light in operation



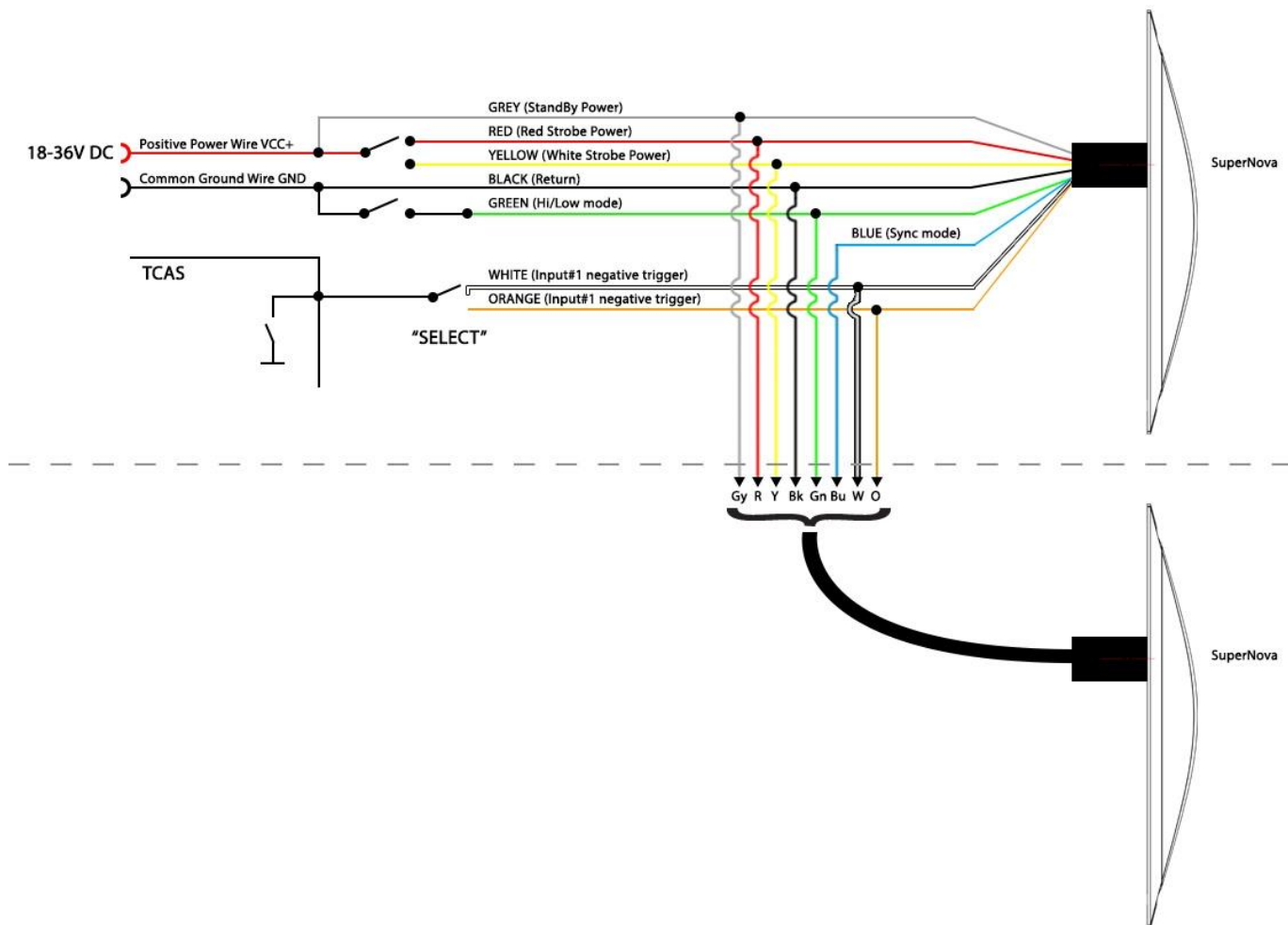
Figure 04: Red **SuperNova Titania™ White/Red** anti-collision light in operation

1.2 Operating Instructions

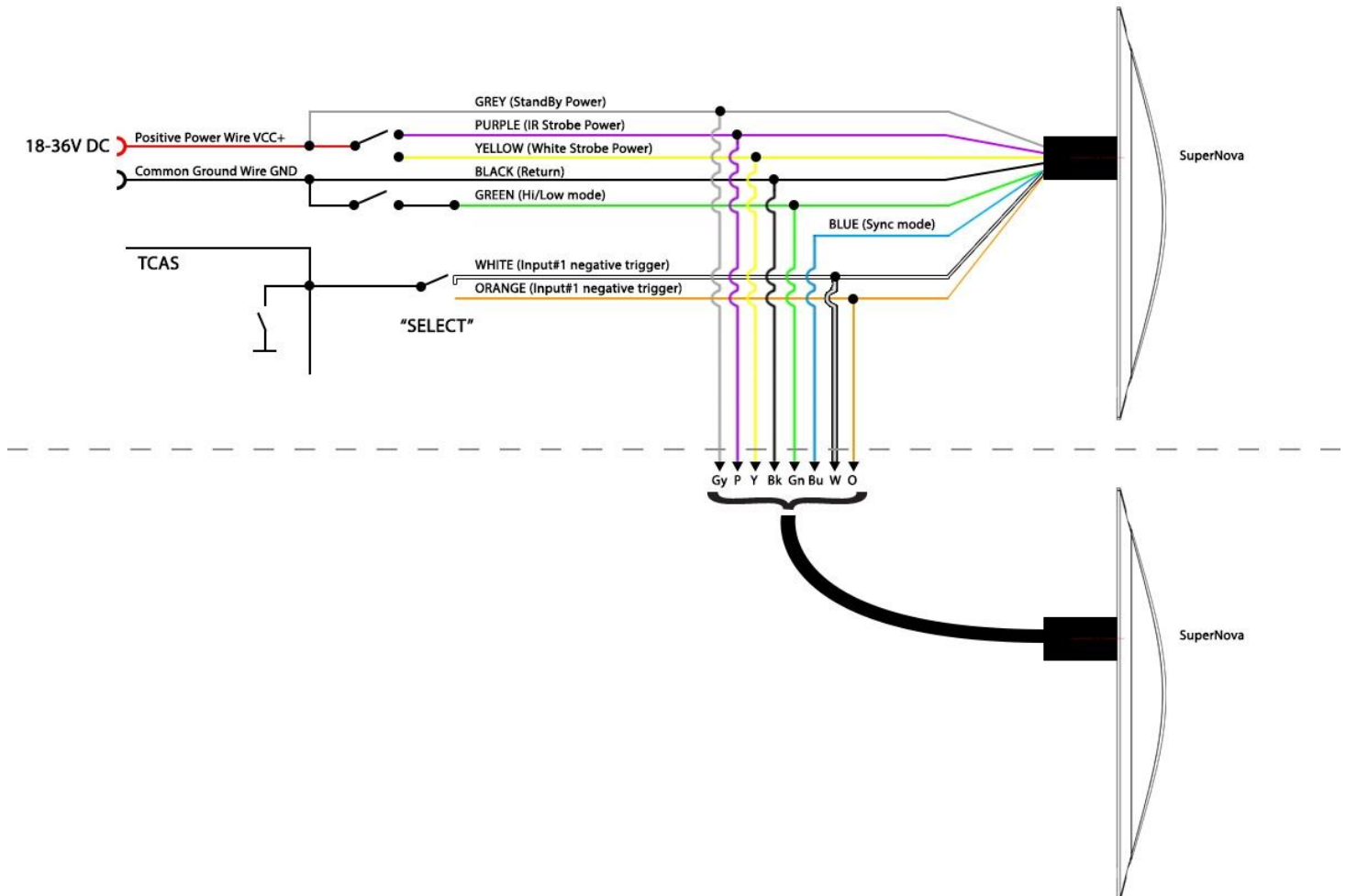
When installed on the aircraft, using the aircraft's power (28 volts), the light will be at its maximum intensity. Operating voltage range is 18 to 36 V DC.

1.3 Installation Schematic / Wiring Diagram

White/Red



White/IR



Wire type: multicores 22 AWG, 600 V insulation, 200°C rating;
Wire length: 11.81" minimum (300 mm minimum)

1.4 Control & Power Inputs

Data for **White/Red** light are as follows:

Power section:

Red	+28 V DC, Red recognition strobe,
Yellow	+28 V DC, White anti-collision strobe,
Grey	+28 V DC, Stand-by power,
Black	Common 28 V DC, return RTRN.

Note: When both wires (Yellow + Red) are powered, the white anti-collision strobe has higher priority.

Control section:

Green	Hi/Low mode, Low mode connect to RTRN,
White	input #1 TCAS negative trigger- for White LED,
Orange	input #2 TCAS negative trigger – for Red LED: <ol style="list-style-type: none"> TCAS negative trigger control: <ul style="list-style-type: none"> „0“ - low level voltage: below 3 V DC „1“ - high level voltage: above 9 V DC or not connected Anti/collision light has higher priority than TCAS command
Blue	Synchronisation - connect with the other SuperNova for SYNC mode

Data for **White/IR** light are as follows:

Power Section:

Purple	+28 V DC, IR recognition strobe,
Yellow	+28 V DC, White anti-collision strobe,
Grey	+28 V DC, Stand-by power,
Black	Common 28 V DC, return RTRN.

Note: When both wires (Yellow + Purple) are powered, the white anti-collision strobe has higher priority.

Control section:

Green	Hi/Low mode, Low mode connect to RTRN,
White	input #1 TCAS negative trigger- for White LED,
Orange	input #2 TCAS negative trigger – for IR LED: <ol style="list-style-type: none"> „0“ - low level voltage: below 3 V DC, „1“ - high level voltage: above 9 V DC or not connected; Anti/collision light has higher priority than TCAS command;
Blue	Synchronisation - connect with the other SuperNova for SYNC mode.

1.5 Technical Specification

Dimensions:	199.5 mm x 57.4 mm x 29.0 mm 7.854" x 2.26" x 1.144"
Weight:	max. 250 g / 0.55 lbs
Operating Voltage Range:	18 to 36 V DC

Output current per LED, not less than:

Hight power mode

- White strobe: 0.8 A / LED,
- Red strobe: 0.6 A / LED,
- IR strobe: 0.8 A / LED,

Low power mode

- White strobe: 0.4 A / LED,
- Red strobe: 0.3 A / LED,
- IR strobe: 0.4 A / LED,

Output power, not less than:

- White strobe 86.4 W
- Red strobe 30.3 W
- IR Strobe 25.6 W

Input power, not more than:

- White strobe 100 W
- Red strobe 35 W
- IR strobe 30 W

Input current:

- White Strobe branch: 3.6 A (28 V)
- Red Strobe branch: 1.2A (28 V)

Repetition Flash Rate of Strobe: 50 cycles per minute

Warm up time: not more than 40 s

Low temperature slope start: not more than 60 s

Ambient temperature: -55 °C ... +85 °C

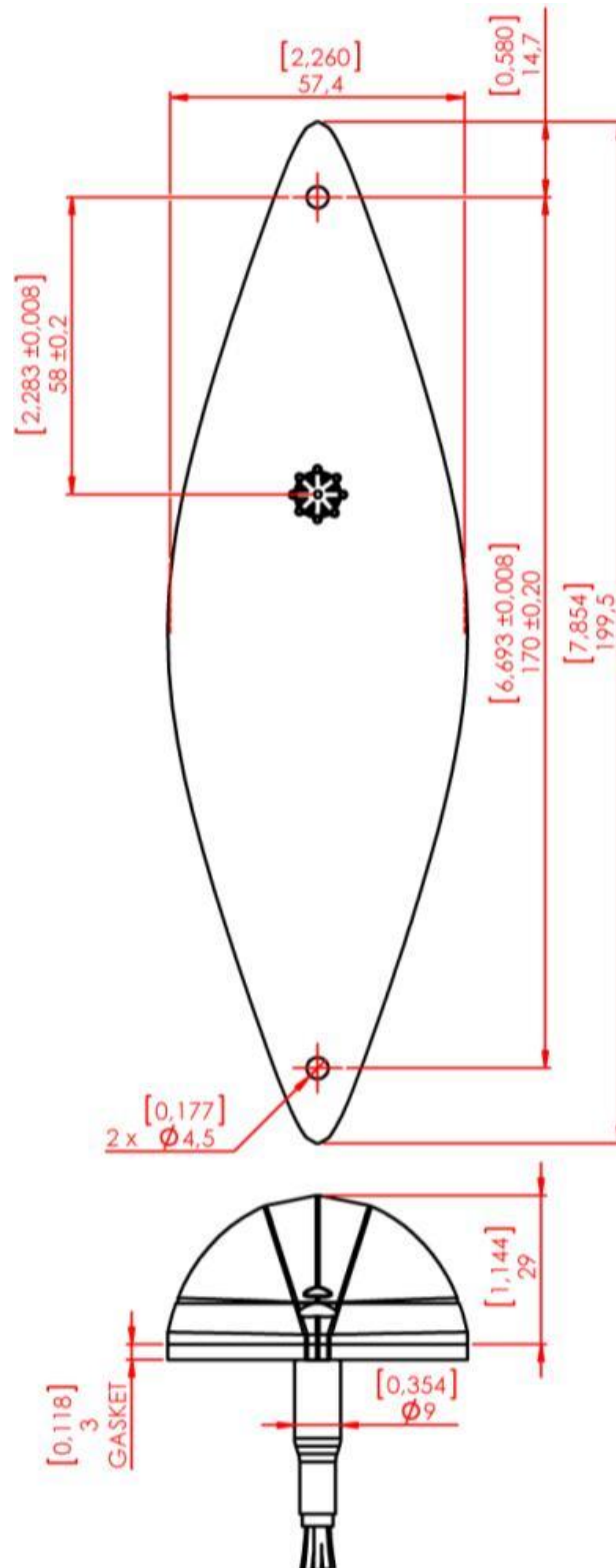
-67 °F ... +185°F

Overheat protection: YES, +85 °C

Voltage protection:

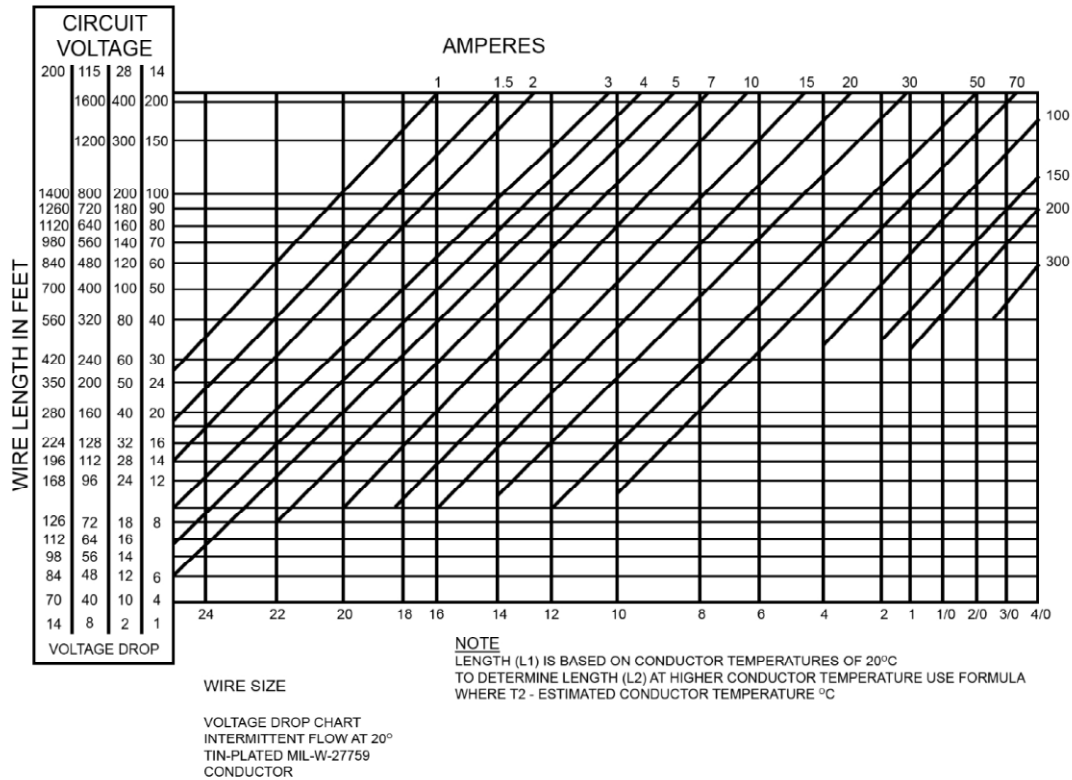
- a. Transient voltage: 60 V, both polarities
- b. Under-voltage lockout: 18 V , not more
- c. Over-voltage lockout: 36 V, not less

1.6 Technical Drawing



*dimensions in [inches] / mm

1.7 Wiring Chart



1.8 Equipment Limitation

The **SuperNova Titania™** light should only be powered by 18-36 V DC, typically by a 24 volt aircraft battery.

1.9 Care and Cleaning of Lights

Aveo Engineering Aviation Lights are factory polished and delivered as ready to install on the aircraft.

If the lights need a deeper cleaning, they should be polished with a quality lamb's wool sheet that is suitable also for deeper polishing. Under no circumstances should any petroleum based product be used to clean the lights.

1.10 Testing the Lights before Installation

All Aveo Aviation lights undergo rigorous testing prior to being released from our engineering manufacturing department. This testing involves a burn-in time

as well as other function testing. No light is released for sale without undergoing this extensive operational testing.

When you receive the **SuperNova Titania™** light, and wish to test the function of the light prior to installation on your aircraft, please observe the following procedure:

1. Review the written information that is enclosed in the packaging. Warranty information as well as a cautionary note about power supply removal is enclosed in each package.
2. Remove the light from the package. Note that there are eight (8) sets of wires:

Power section:

Red	+28 V DC, Red recognition strobe, or
Purple	+28 V DC, IR recognition strobe;
Yellow	+28 V DC, White anti-collision strobe,
Grey	+28 V DC, Stand-by power,
Black	Common 28 V DC, return RTRN.

Control section:

Green	Hi/Low mode, Low mode connect to RTRN,
White	input #1 TCAS negative trigger- for White LED,
Orange	input #2 TCAS negative trigger – for IR or Red LED:
Blue	Synchronisation - connect with the other SuperNova for SYNC mode

3. Testing the function of the light can be accomplished using a regular 28V/5A DC power supply (not a battery charger).

Connect the black wire to the ground (negative) leads of a power supply, then connect the yellow or red(purple) wire to the positive (+) leads on the power supply. The light should start flashing (yellow wire = strobe light, red [purple] wire = red [IR] light). Connecting the blue wires from each **SuperNova Titania™** light together (and not to the ground or positive terminals on the battery) should result in flashing all lights at once. It indicates the synchronization feature is working properly.

When installed on the aircraft and using the aircraft's power (28 volts), the light will be at its maximum intensity.

If the tests are successfully completed, the lights can be installed on the aircraft.

IMPORTANT NOTES:

Under no circumstances should any power supply other than a 18-36V DC, or a 28 volt battery be used to test the light. Do not use: Battery chargers, battery back-up power devices, or other bench avionics testing methods to test the aviation light. The light is functional between 9 and 36 volts. Use of a battery

charger or other power unit to test the light will void the warranty and may damage the light.

If you have any questions about the installation of the lights, please refer to our web site: www.aveoengineering.com.

1.11 Notes on Installation

Stainless steel screws M4 (DIN912) or SHCS #8-32 or equivalent mounting screws are recommended to be used for installation. Screw length depends on placement of screws on aircraft.

Spread the tightening forces evenly around the mounting hole.