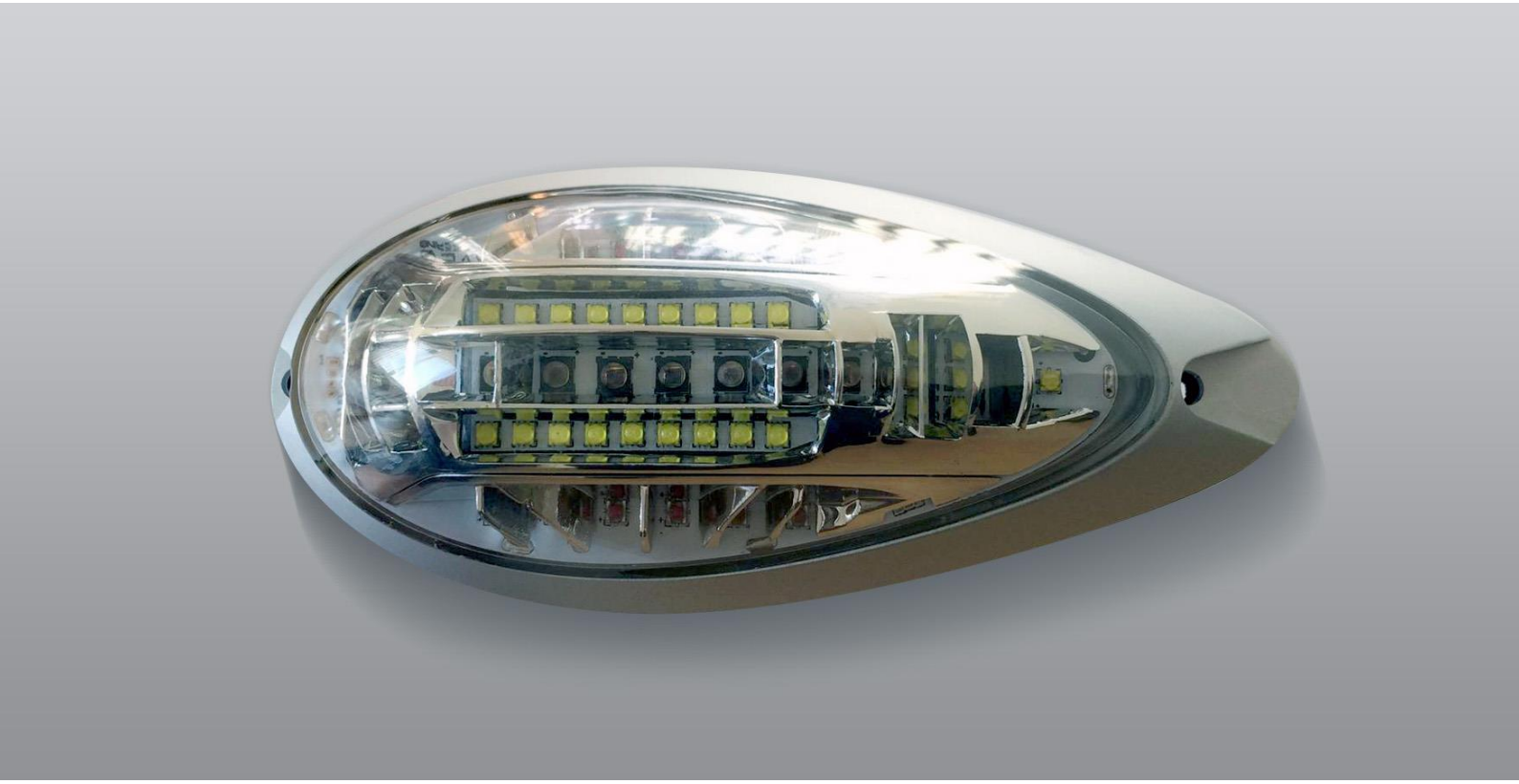
AVEO ENGINEERING GROUP



INSTALLATION MANUAL

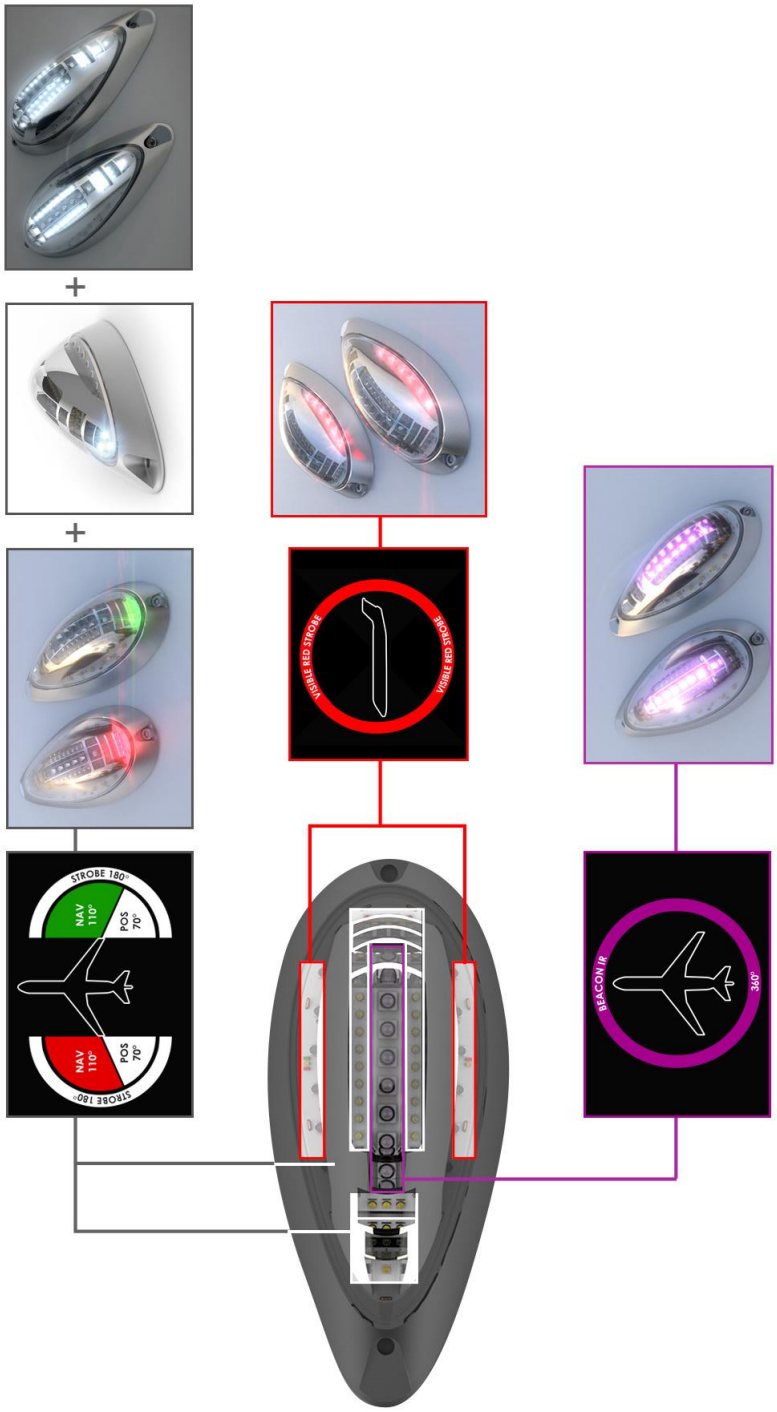
Super StealthViz

DOC.NO:AVE-SSAWIRP-IM

1. Super StealthViz

Super StealthViz™ is the ultimate ALL-IN-ONE minimum EMI signature winglight for the defense industry. With the industry's lowest drag profile and complete IR coverage strobe of 180º coupled with NVIS RED strobe, this light also provides required Nav-Position-Strobe per TSO standards.

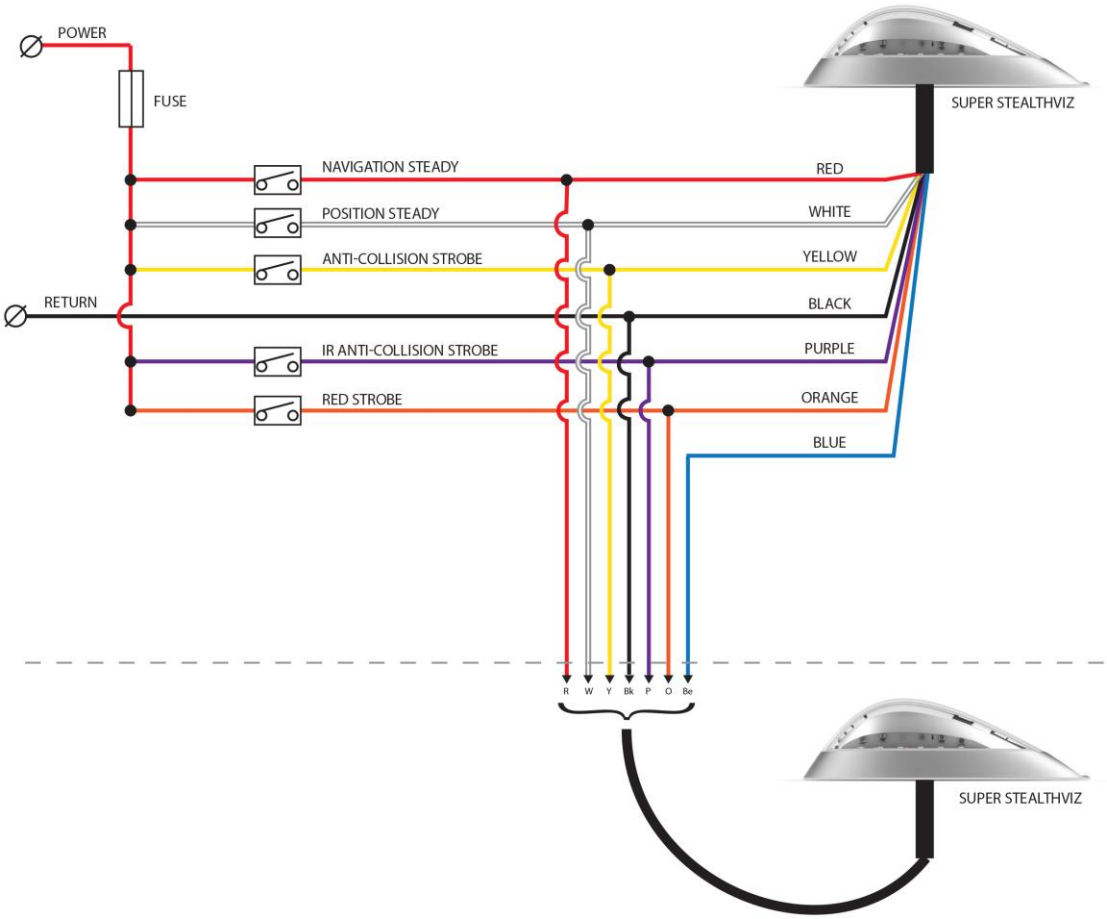
- Super StealthViz (Red) **AVE-SSAWIRPR-50A**
- Super StealthViz (Green) **AVE-SSAWIRPG-50A**



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 9-36VDC.*

3. INSTALLATION SCHEMATIC / WIRING DIAGRAM



Wire type: multicores 22AWG, 600V insulation, 200°C rating;
Wire length: 12" minimum (310mm minimum)

4. CONTROL & POWER INPUTS

Red	+28V, Visible Navigation Steady;
White	+28V, Visible Position Steady;
Yellow	+28V, Visible white Anti-collision Strobe;
Purple	+28V, IR Anti-collision Strobe; IR Anti-collision has an above priority than White Anti-collision. If powered Yellow and Purple, active is IR Anti-collision.
Black	Common 28 return VRTN;
Orange	+28V, Visible red Anti-collision Strobe;

Red Strobe has an above priority than White strobe. If powered Yellow and Orange, active is Red Strobe.

IR Anti-collision has an above priority than Red Anti-collision. If powered Orange and Purple, active is IR Anti-collision.

Blue Sync, Strobe Synchronization.

Connect Blue wires from left and right lights together for synchronization.

No need any external synchronization device.

Synchronization pulse level: 0-0.3V

Synchronization pulse duration: 5-10mS

Use external open drain mosfet for control if need external synchronization.

Do not connect any if not use.

5. TECHNICAL SPECIFICATION

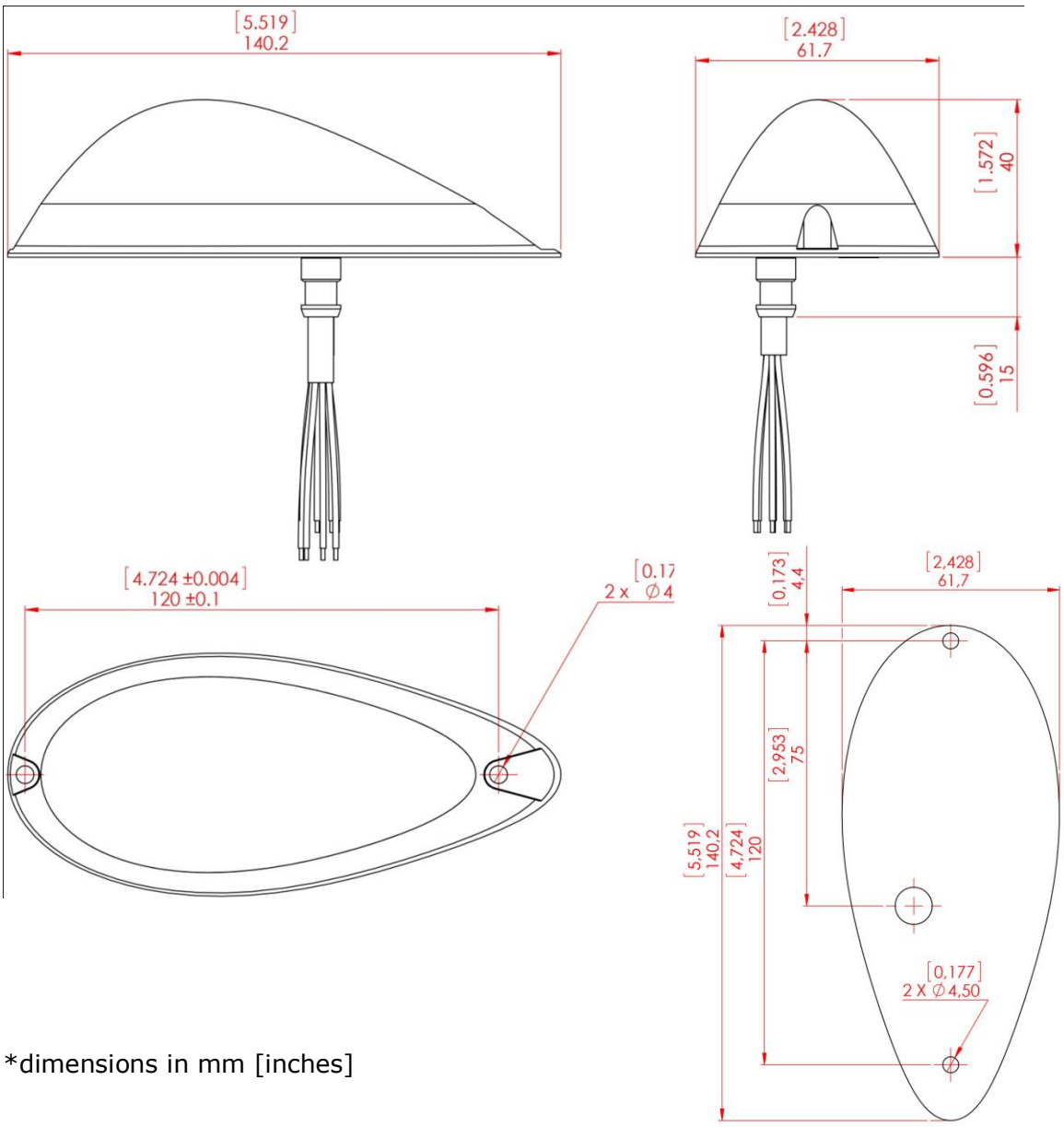
Dimensions:	140.2 mm x 61.7 mm x 40 mm 5.519” x 2.428” x 1.572”
Operating Voltage Range:	9 - 36 Vdc

Performance at 12-36VDC, 25degC and 82% DC-DC efficiency:

Output power:	
– navigation + position: (red + white steady)	4.3 W
– navigation + position: (green + white steady)	5.6 W
– white strobe:	30.8 W
– IR pulse strobe:	21.8 W
– Red pulse strobe steady:	27.4 W
Input power:	
– navigation + position: (red + white steady)	6.6 W
– navigation + position: (green + white steady)	7.2 W
– white strobe:	36 W
– IR pulse strobe:	25 W
– red pulse strobe:	33 W
Output current:	
– navigation red/green:	0.2A/LED
– position - white:	0.2A/LED
– white strobe:	0.3A/LED
– IR pulse strobe:	0.85A/LED
– red strobe:	0.8A/LED
Wavelength (IR):	IR 850nm
Repetition Flash Rate of Strobe:	50 cycles per minute

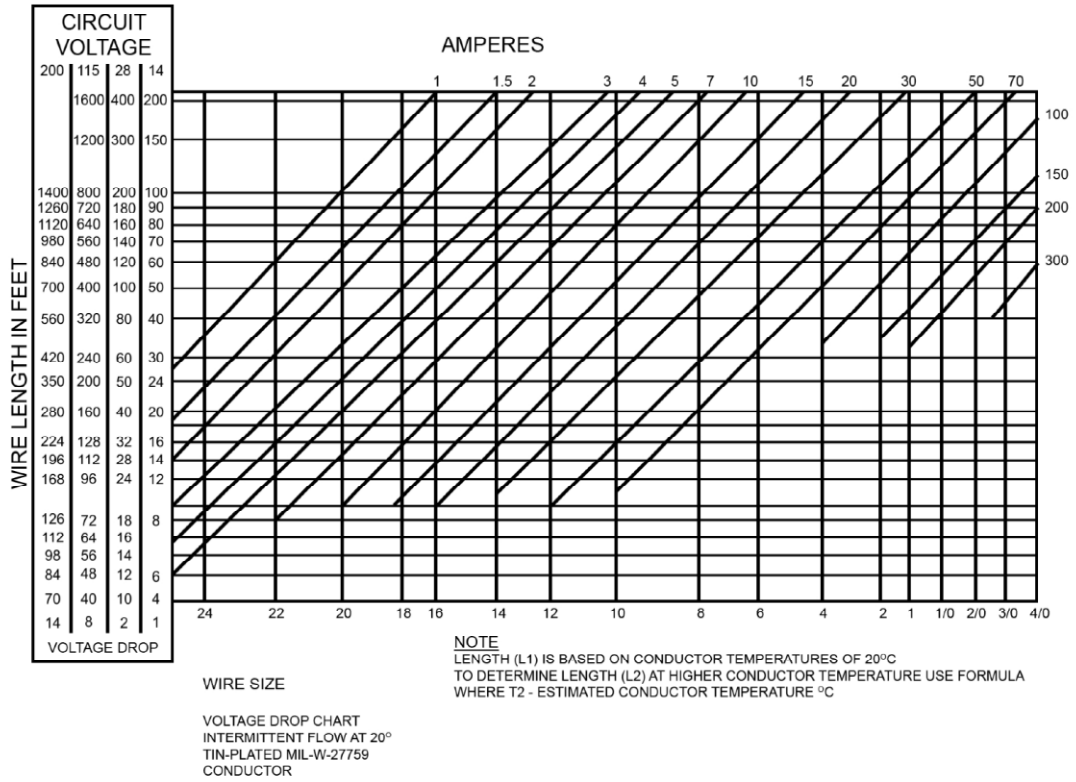
Warm up time:	not more than 40s
Low temperature slope start:	not more than 60s
Ambient temperature:	-55 °C..+75°C
Overheat protection:	+85°C
Voltage protection:	
a. Transcend voltage:	80V@2 seconds, both polarities
b. Under-voltage lockout:	9V , not more
c. Over-voltage lockout:	36V, not less

6. TECHNICAL DRAWING



*dimensions in mm [inches]

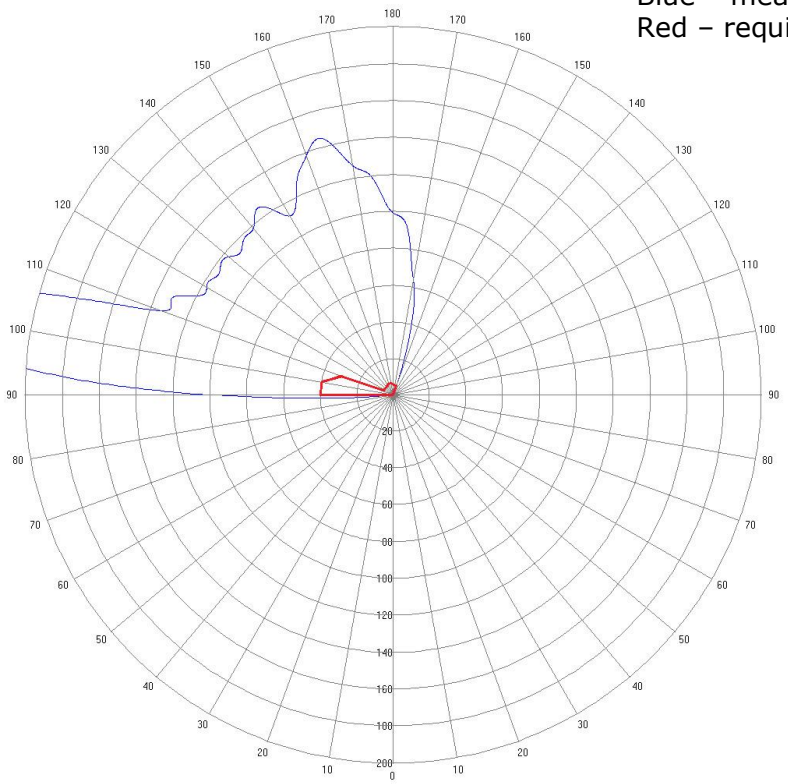
7.WIRING CHART



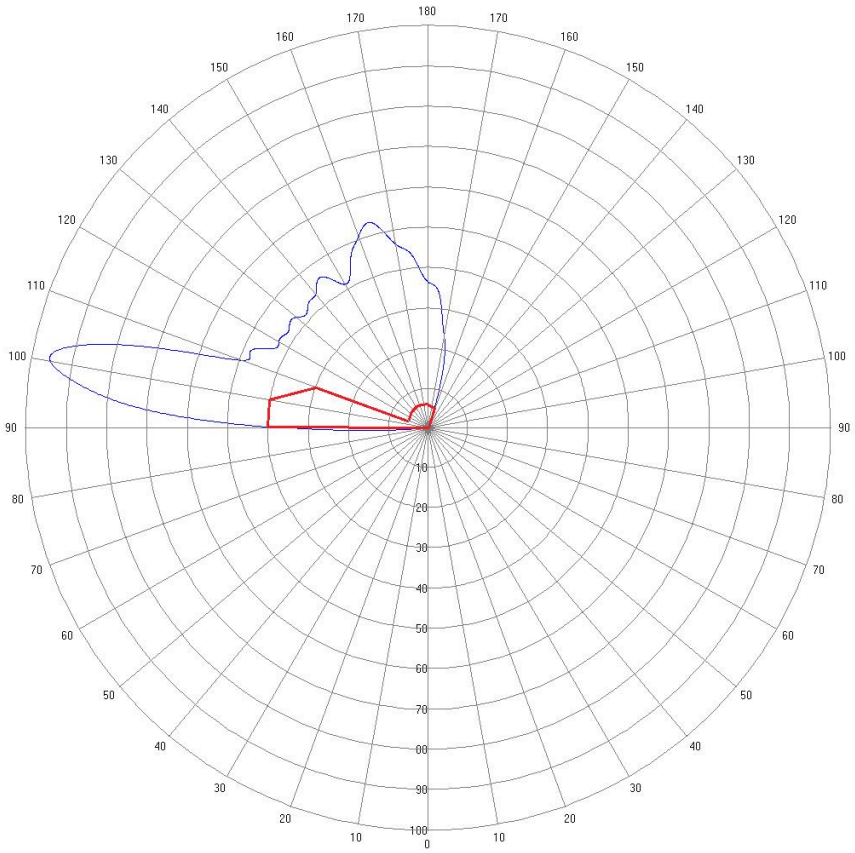
8. OPTIC SIMULATION

FRONT GREEN NAVIGATION LIGHT

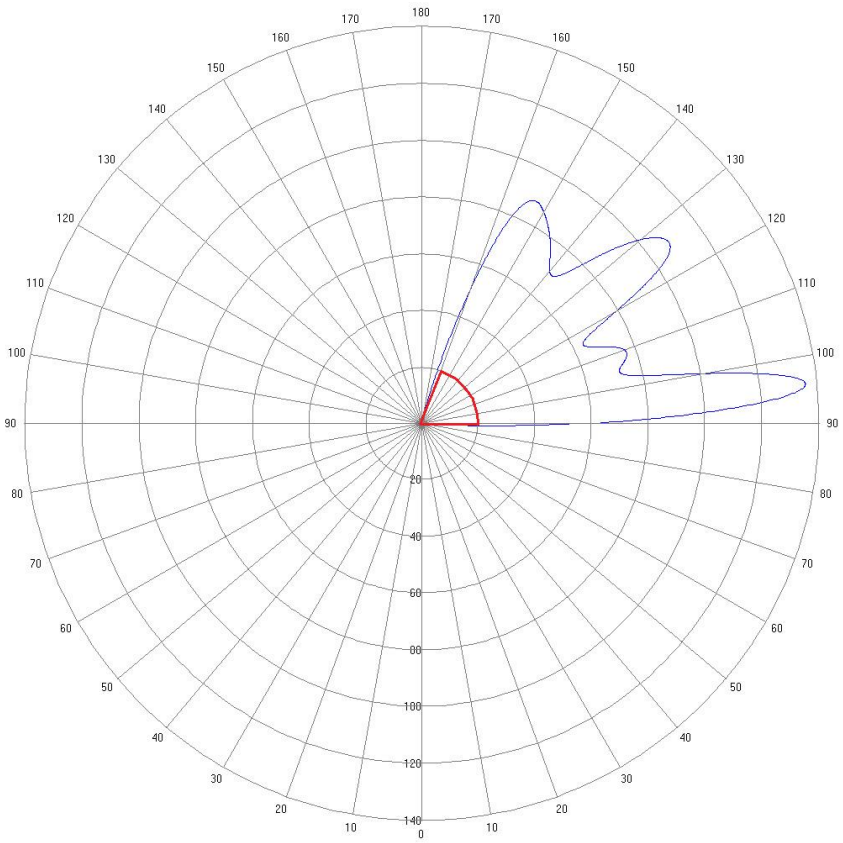
Blue – measured
Red – requirements



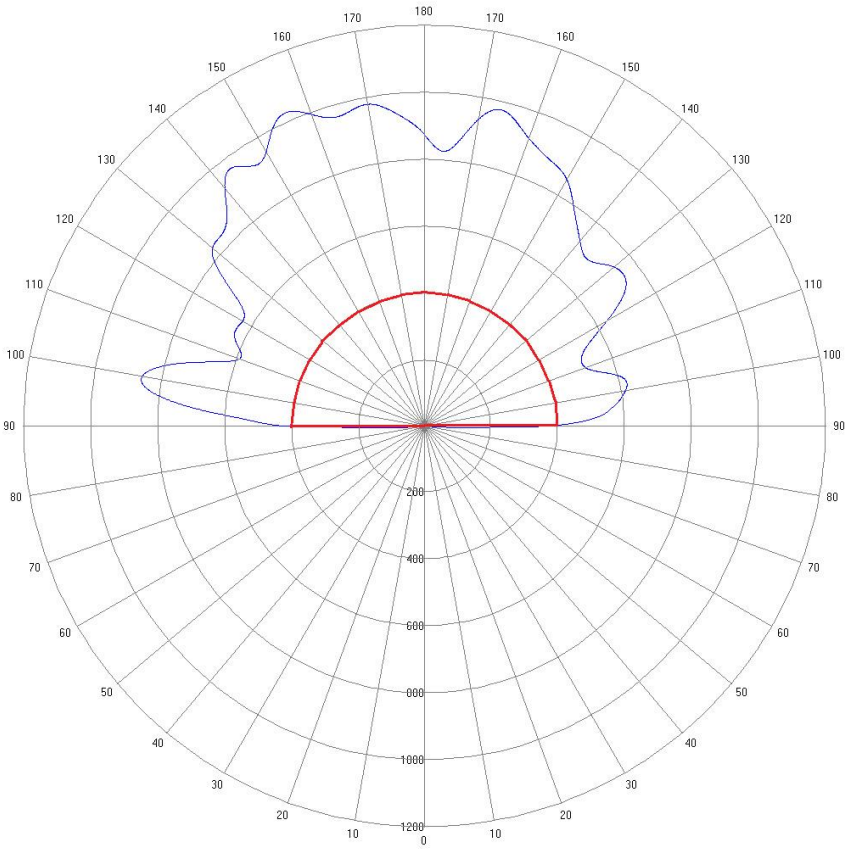
FRONT RED NAVIGATION LIGHT



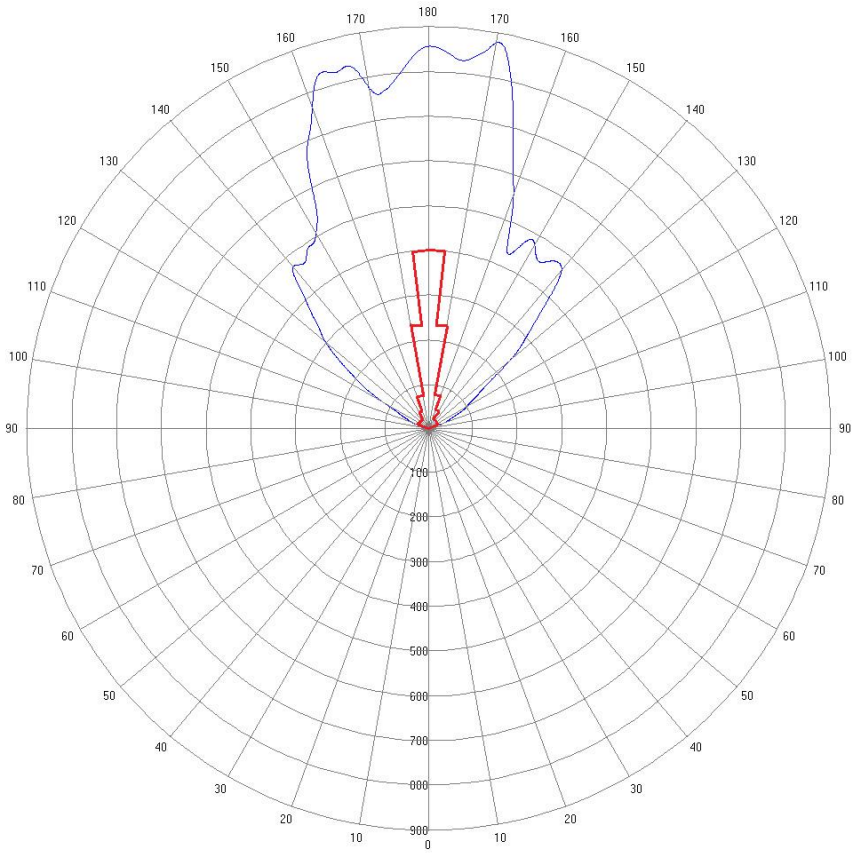
REAR POSITION LIGHT



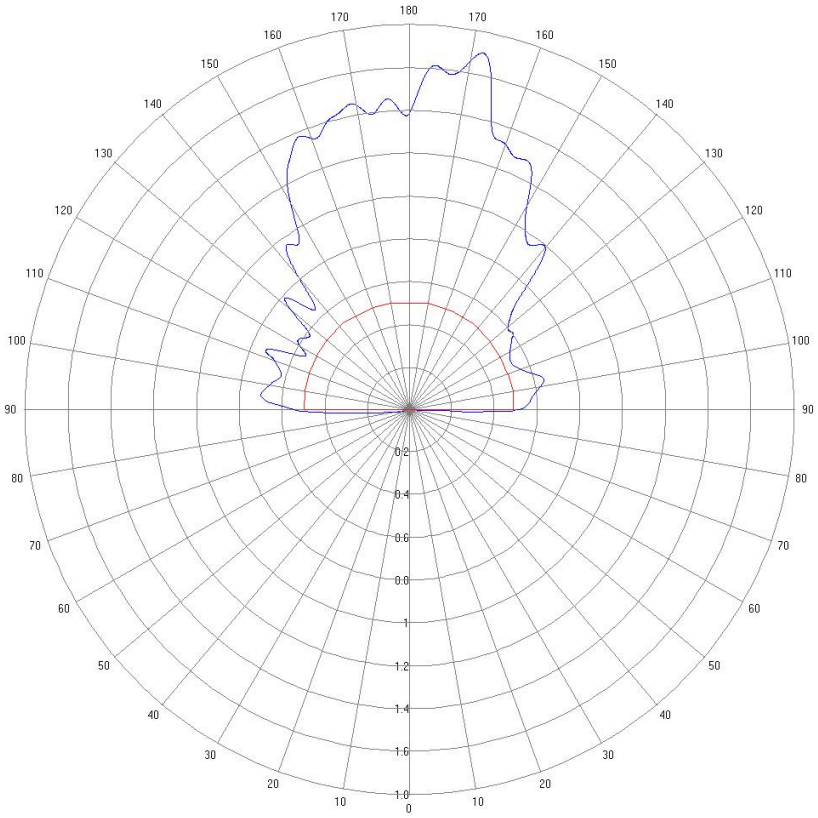
STROBE LIGHT – Horizontal



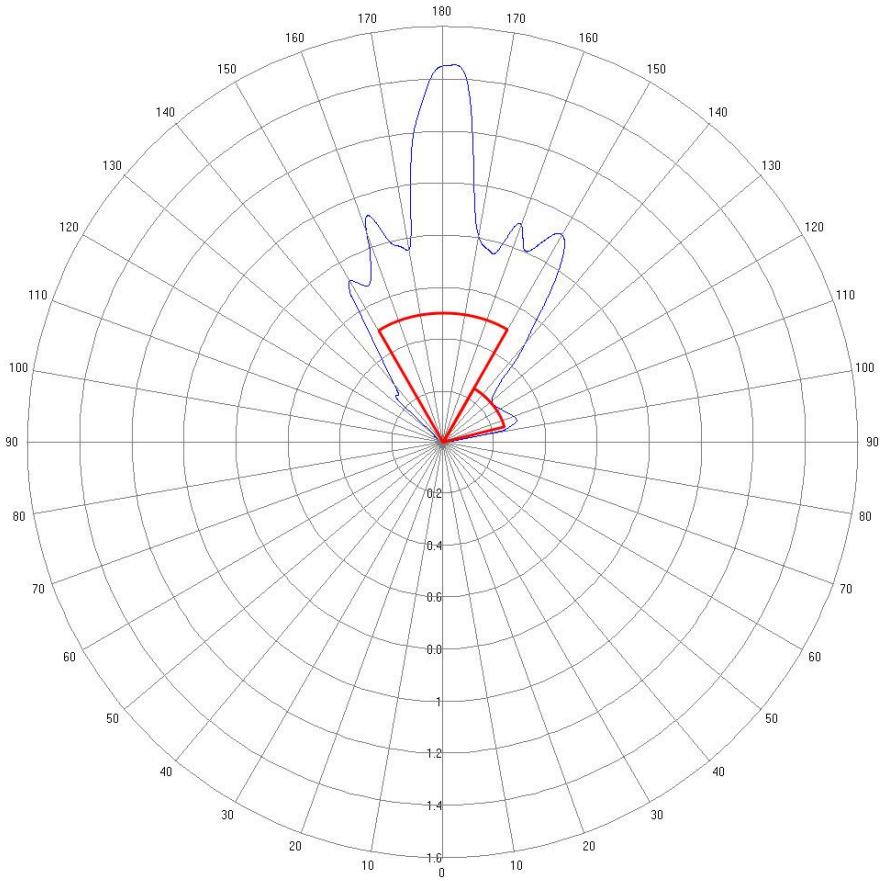
STROBE LIGHT – Vertical



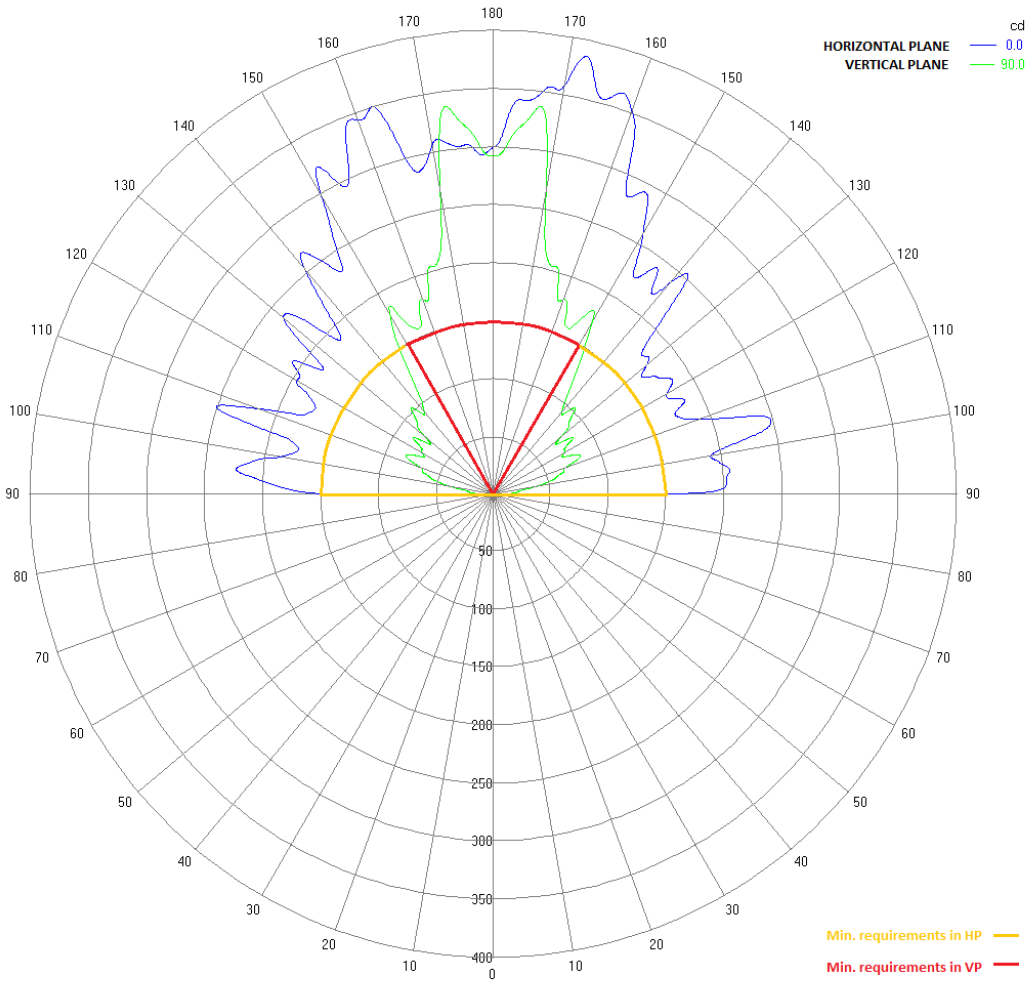
STROBE IR LIGHT – Horizontal



STROBE IR LIGHT – Vertical



RED STROBE – Horizontal and vertical plane



9. EQUIPMENT LIMITATION

Super StealthViz should only be powered by 9-36VDC.

10. CARE AND CLEANING OF YOUR AVEO ENGINEERING AVIATION LIGHTS

When you receive your Aveo Engineering Aviation Lights, they will have been factory polished and ready to install on the aircraft.

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

11. TESTING OF THE LIGHT 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 ***Super StealthViz*** light, and wish to test the function of the light prior to installation on your aircraft, please note the following:

1. Please review the written information that is enclosed in the packaging. Warranty information as well as a cautionary note about power supply removal is enclosed with each package.

2. Remove the light from the package. Note that there are seven (7) wires coming from each light:

Red +28V, Visible Navigation Steady;
White +28V, Visible Position Steady;
Yellow +28V, Visible white Anti-collision Strobe;
Purple +28V, IR Anti-collision Strobe;
Black Common 28 return VRTN;
Orange +28V, Visible red Anti-collision Strobe;
Blue Sync, Strobe Synchronization.

3. Testing of the function of the light can be done with 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, white, purple, orange or red wire to the positive (+) leads on the power supply. The light should start flashing (yellow wire = Visible anti-collision light, purple wire = IR anti-collision light, orange wire = red anti-collision light) or lighting (red wire = green/red steady, white wire = white steady). Connecting the blue wires from each Super StealthViz light together (and not to the ground or positive terminals on the battery) should show that the lights are flashing together and indicates the synchronization feature is working properly.

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

After testing, the light can be installed on the aircraft.

IMPORTANT NOTES:

1. Under no circumstances should any power supply other than a 9-36 VDC, 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