Auxiliary Light Placement

Teal Drones designed the Teal 2 UAS for military applications that require stealth. As a result, the Teal 2 UA does not feature anti-collision lighting. The Teal 2 does feature built-in navigation lights on the left and right sides of the UA. Anti-collision lights and additional navigation lights can be added to the UA.

This document provides guidance for selecting and attaching auxiliary lighting and inspecting the lighting for optimal flight performance.

1. Requirements and Responsibilities

The national airspace system requires anti-collision lighting for all operations occurring between sunset and sunrise. Pilots subject to statues governing public aircraft operations and pilots flying under Part 107 must equip the UA with anti-collision lighting.

The Remote Pilot in Command (RPIC) is responsible for ensuring the anti-collision lighting is attached appropriately, sufficient for the intended flight, and the UA is safe for operation.

2. Selecting Lights

The Teal 2's maximum carry load is 75 grams. Use lightweight lights to keep the carrying weight to a minimum. Teal Drones uses lights weighing eight grams each.

Select lights that are lightweight and aerodynamic. Lightweight, aerodynamic lights reduce drag and have less impact on UA performance.

For the best performance, select lights that are:

- Lightweight
- Low profile
- Low surface area

2.1 Example lights

The Firehouse Technology ARC "V" Professional Series Strobe light and Lume Cube strobe light are examples of lightweight, aerodynamic lights.

3. Minimize Flight Interference

When attaching lights, be mindful of how the light may affect the UA's performance. Auxiliary lights can interfere with sensors inside the UA and mechanical operations. Teal Drones recommends at least 10mm of clearance for the propeller blades.
If not placed correctly, lights attached to the top of the UA may interfere with the GPS antenna and magnetometer.

After attaching lights on the top, make sure:

- The light does not contact the propellers.
- The light does not interfere with the gimbal cover.
- The light does not interfere with other operations.

If not placed correctly, lights attached to the sides of the UA may interfere with access to the USB and Media ports, battery swaps, and may contact the ground.

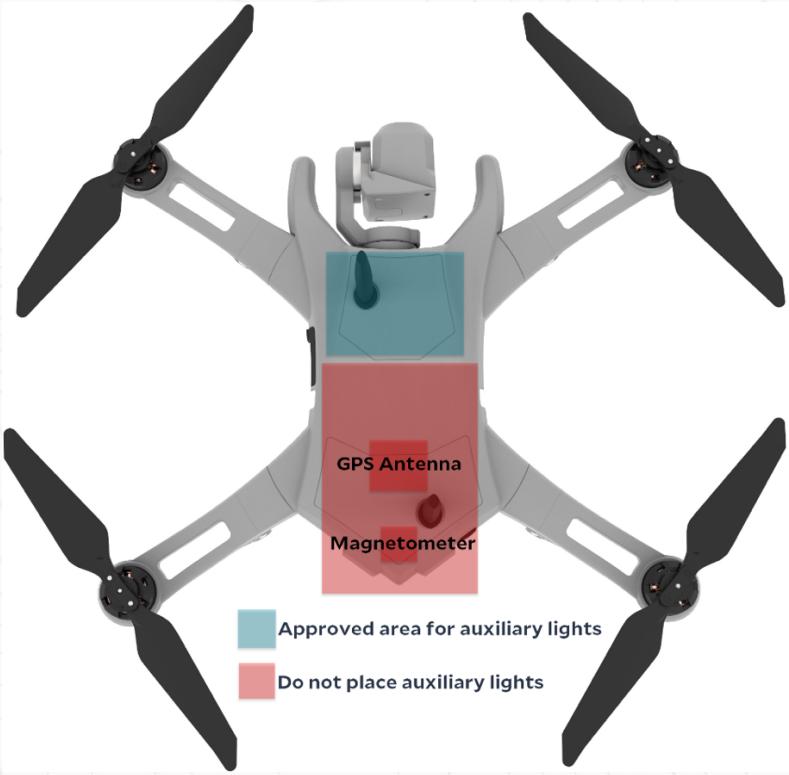
After attaching the lights on the sides, make sure:

- The light is below the seam in the plastic.
- The USB and Media ports are accessible.
- The light does not interfere with battery swaps.
- The light does not contact the ground.
- The light does not contact the propellers.

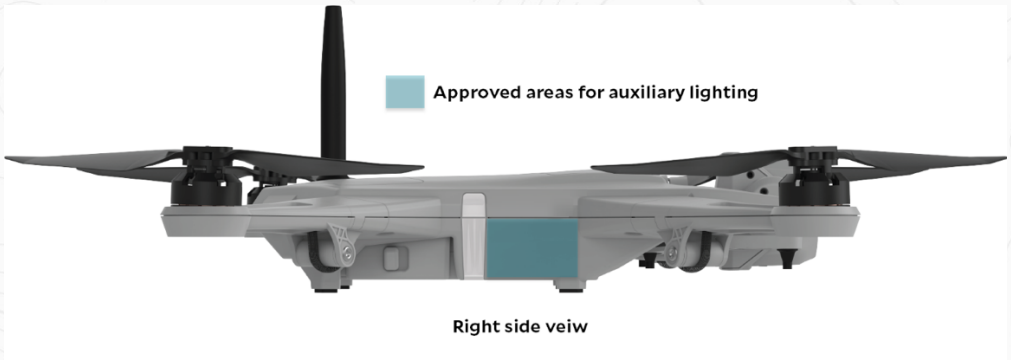
4. Auxiliary Lights Placement

Anti-collision lights can be placed on the top of the UA. Additional navigation lights can be attached to the sides of the UA. Only attach lights in the approved areas.

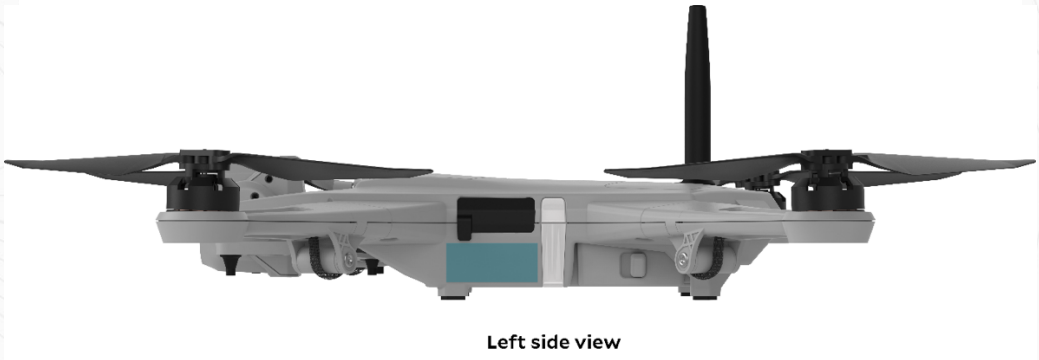
4.1 Approved Areas for Anti-Collision Lights



4.2 Approved Areas for Navigation Lights



Right side veiw



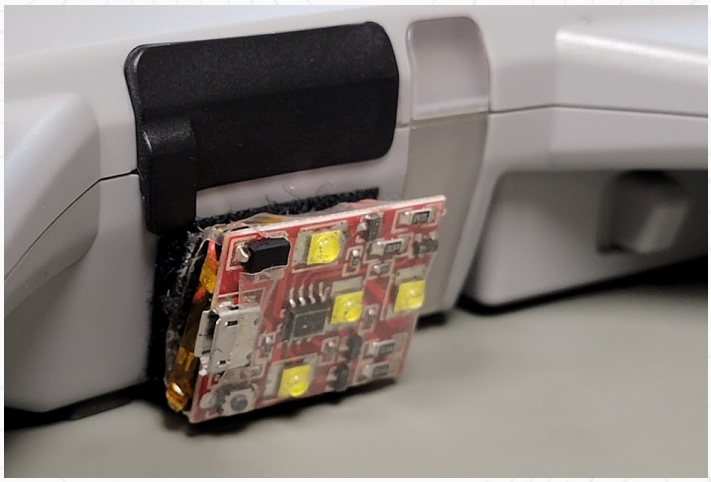
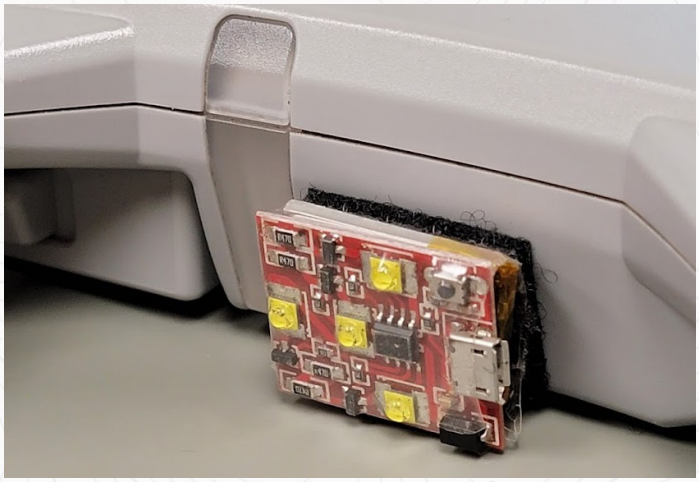
Left side view

5. Attach the Auxiliary Lights

Teal Drones recommends using strong Velcro to secure the light to the UA. Make sure the adhesive is secure. Unsecured attachments may add vibration to the UA and affect its internal sensors.

To attach auxiliary lights:

1. Cover the camera with the gimbal cover. This ensures the light does not interfere with covering the gimbal.
2. Place the Velcro and light in the approved area.
3. Make sure the Velcro and light are secure.
4. Spin the propellers to make sure they do not contact the light.
5. Test the placement before flying the UA. Make sure the light does not interfere with any mechanical operations or sensors.

5.1 Examples of attached lights

Below are examples of lights attached with Velcro.