**Purchase Specifications for a
Self-Contained Solar LED Aviation Light**

**Overview**

This specification is for a self-contained solar-powered LED aviation light.

Each light shall be entirely self-contained with 2 x custom solar panels, 3.6V 16Ah NiMH battery, microprocessor-controlled electronics, ultra-high intensity LEDs and RF interface.

The lights shall be delivered ready to install. The only assembly required will be activation of each individual light and optional mounting accessories.

**1.0 Light Characteristics**

The light shall use 12 visible ultra-high intensity LEDs and 6 infrared LEDs.

The light output shall be available in red, green, white, yellow and blue.

The light shall have a peak intensity of 9.0cd steady-on (green light output).

The light shall have a horizontal output of 360°.

The light shall have a vertical divergence of 0 - +7°.

The light shall have an omnidirectional 360° LED reflector.

The light shall have a minimum of 250 flash characteristics available. The flash characteristics shall be user adjustable without the need for infrared controllers.

The light shall have three (3) intensity adjustments being Low, Medium and High.

The light shall have Radio Frequency control.

When operating by radio control, the radio system shall use a mesh network to expand the working range indefinitely.

**2.0 Electrical Characteristics**

The light shall have an operating voltage of 3.6v.

The light shall have an operating temperature range between -40 to 80°C.

**3.0 Solar Characteristics**

The light shall use two multi-crystalline solar modules, angled at 60 degrees.

The output of the solar module shall be 2.5watts.

The solar module efficiency shall be 14%.

Charging regulation shall be microprocessor controlled.

**4.0 Power Supply**

The light shall use a high grade NiMH battery.

The battery capacity shall be 16Ah.

The nominal voltage shall be 3.6v.

The light shall have an autonomy of at least 20 nights steady-on when in low intensity mode.

**5.0 Physical Characteristics**

The light shall be manufactured from UV-stabilised LEXAN® polycarbonate (lens and body).

The light shall have a lens diameter of 140mm (5½ inches).

The light shall have a lens design using external optics with interior flute design.

The light lens shall be pitched to accompany 2 internal solar modules, angled at 60 degrees.

The light shall have a mounting pattern using 6 x 17mm holes on 200mm PCD.

The light shall have a height of 240mm (9½ inches).

The light shall have a width of 231mm (9⅛ inches).

The light shall have a mass of 1.7kg (3¾lbs).

The light base shall be coloured to indicate the LED output colour during daylight.

**6.0 Handheld Remote Control**

The light will be activated via a Handheld Remote Controller.

The Handheld Remote Controller will operate at a frequency of 2.4GHz.

The Handheld Remote Controller will be FCC / CE Compliant

The Handheld Remote Controller will have 128bit security encryption.

The Hand Held Remote Controller will allow the following operations to be activated:

* LED Intensity. Factory set to 3 x different intensities.
* LED Grouping, e.g. Visible or IR
* Light Grouping, each light can be programmed to work in at least 10 x separate groups within a single airfield.
* Lighting Characteristics – each light can be set to work as either Steady On or with up to 255 x Flash Codes
* Battery Diagnostic Function – using the Hand Held Remote each light can display if the internal battery is above or below a factory set voltage

**7.0 Options**

The light shall be offered with the following options available from the manufacturer:

* Pilot activated lighting control
* IR LEDs
* External ON/OFF Switch
* External Battery Charging Port
* Manual Operation
* Sectored combinations

**8.0 Environmental Factors**

The light shall meet the following environmental factors:

Humidity: 0 to 100%, MIL-STD-810F

Icing: 22kg per square inch

Wind Speed: up to 160kph

Shock: MIL-STD-202G, Test Condition G, Method 213B

Vibration: MIL-STD202G, Test Condition B, Method 204

**9.0 Certifications**

The light shall be IP68 waterproof.

The light shall meet CE EN61000-6-3:1997. EN61000-6-1:1997

The manufacturer shall be ISO9001:2008 certified.

**10.0 Compliance**

The light shall comply with:

* ICAO Annex 14 Volume 1, ‘Aerodrome Design and Operations’, paragraph 5.3.17.7
* FAA AC5345-46D L861T when the light is operated in High Intensity Mode
* FAA AC5345-50B L863 when the light is operated in High Intensity Mode
* CASA Manual of Standards Part 139 paragraph 9.13.15.1 and 9.13.15.3 Section 9.2.2.1 when the light is operated in High Intensity Mode

**11.0 Warranty**

The light shall have a three (3) year warranty, excluding battery which will have a warranty of one (1) year.