Purchase Specifications for a
Self-Contained Solar LED Runway or Approach Airfield Light

AV426 Standard

Overview

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

Each light shall be entirely self-contained with 4 x custom solar panels, 12V 24Ah SLA (Sealed Lead Acid) 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 a multiple ultra-high intensity LED's.

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

The light shall have a peak intensity (steady-on) of
- Red light output 25.0cd
- Green light output 370.0cd
- White light output 275.0cd
- Yellow light output 92.5cd

The light shall have a horizontal output as per L861 and L861E.

The light shall have a vertical divergence as per L861 and L861E.

The light shall have flash characteristics available including steady-on, Morse Code and RF sequenced and synchronised flashing.

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

The light shall have Radio Frequency control using unlicensed frequency band 2.4 Ghz

When operating by radio control, the light shall use an encrypted repeating mesh network to expand communication range

2.0 Electrical Characteristics

The light shall have integrated circuit protection.

The light shall have an operating voltage of 12v.

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

3.0 Solar Characteristics

The light shall use four (4) multi-crystalline solar modules.

The total output of the solar module shall be 24watts. (4 x 7watt)

The solar module efficiency shall be 21%.

4.0 Power Supply

The light shall use a SLA (Sealed Lead Acid) battery.

The battery capacity shall be 24Ah.

The nominal voltage shall be 12v.

5.0 Physical Characteristics

The body of the light shall be manufactured from UV-stabilised LEXAN® polycarbonate.

The light lens shall be manufactured from UV-stabilised acrylic.

The light shall have a lens diameter of 171.5mm (6¾nches).

The light shall have a mounting pattern using 4 hole 200mm bolt pattern.

The light shall have a height of 503mm (20 inches).

The light shall have a width of 234mm (9⅕ inches).

The light shall have a mass of 14kg (30⅞lbs).

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 250 x Flash Codes including Morse Code and RF sequenced and synchronized flashing
- 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
- Without RF Radio control

8.0 Environmental Factors

The light shall meet the following environmental factors:

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

Icing: 3.41kg per square cm / 48.5lbs per square inch

Wind Speed: up to 160kph / 100mph

Shock: MIL-STD-202, Test Condition H, Method 213

Vibration: MIL-STD202, Test Condition B, Method 204

9.0 Certifications

The light shall be IP68 waterproof.

The light shall meet CE EN61000-6-3:2007. EN61000-6-1:2007.

The manufacturer shall be ISO9001:2015 certified.

10.0 Compliance

The light shall be supplied with an optic to meet either:

- Photometrics and chromaticity for ICAO Annex 14 Volume 1, 'Aerodrome Design and Operations', Forth edition July 2004. Runway Edge - paragraph 5.3.9. Appropriate for use as threshold - paragraph 5.3.10, 5.3.11 threshold light or end light Approach - paragraph 5.3.4.1A & B, 5.3.4.8 simple approach lighting system
  OR
- Photometrics and chromaticity for FAA AC/150-5345-46D L861 (High Intensity Mode)

11.0 Warranty

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