Purchase Specifications for a

Self-Contained Solar LED Taxiway and Threshold Airfield Light

AV-70 Standard

Overview

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

Each battery shall be entirely self-contained with 2 x solar panels, 3.6v 8.6 Ah environmentally friendly NiMH battery, microprocessor controlled electronics and a single ultra-high intensity LED.

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

Light Characteristics

The light shall use a single, ultra-high intensity LED.

The LED shall have a life expectancy of greater than 100,000 hours.

The light shall be available in red, green, white, amber and blue, and sectored combinations of colors like green/red for threshold/runway end combination fixtures.

The light shall have a horizontal output of 360 degrees.

The light shall have a vertical divergence of 0 to +7 degrees.

The light shall have an omnidirectional 360° LED reflector.

The light shall have 250 flash characteristics, including Steady-On. The flash characteristics shall be user adjustable without the need for infrared controller.

The light shall have three (3) intensity adjustments available: Low, Medium and High, which are available in 25% increments and subject to solar availability.

The light shall have an optional Radio Frequency control using 2.4GHz ISM Band.

The light shall use an encrypted repeating mesh network to expand communication range when operating by radio control.

1.0 Electrical Characteristics

The light shall have an operating voltage of 3.6v.

The light shall have an operating temperature range between -40 to 55°C.

3.0 Solar Characteristics

The light shall use a monocrystalline solar module.

The lights' solar module shall have a total output of 2.8watts (2 x 1.4 watts).

The solar module efficiency shall be 21%.

The charging regulation shall be microprocessor controlled.

4.0 Power Supply

The battery type shall be a high grade, environmentally friendly NiMH.

The battery shall have a nominal voltage of 3.6V.

The capacity shall be 8.6Ah.

5.0 Physical Characteristics

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

The light lens shall be manufactured from UV-stabilized LEXAN polycarbonate.

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

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

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

The light shall have a width of 231mm ($7^{1}/_{8}$ inches).

The light shall have a mass of 1.4kg ($3^{1}/_{8}$ lbs.)

6.0 Handheld Remote Control

The light shall have an option to be activated via a Handheld Remote Controller.

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

The Handheld Remote Controller will be FCC / CE Compliant

The Handheld Remote Controller will have 128 bit security encryption.

The Hand Held Remote Controller will allow the following operations:

- 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:

- High Intensity (AV-70-HI)
- RF Radio Control
- Pilot Activated Lighting Control
- IR LED for tactical operation
- External ON/OFF Switch for Manual Operation
- External Battery Charging Port
- Solar Booster™
- Mounting options which include: frangible concrete, frangible stake, and frangible tile

8.0 Environmental Factors

The light shall meet the following environmental factors:

- Humidity: 0 to 100%, MIL-STD-810F
- Icing: 22 kg /48 lbs. per square
- Wind Speed: up to 160kph/100mph
- 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 EN61000-6-3:2007 and EN61000-6-1:2007 standards.

The light shall be produced by a certified ISO 9001:2015 manufacturer.

The light shall meet the DGAC regulations in Mexico.

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,' Fourth 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
- Photometrics and chromaticity for FAA Barricade AC 150/5370-2F, L861T, LED Color Standard (Engineering Brief No. 67D)

11.0 Warranty

The light and the (optional) Pilot Activiated Lighting Control shall have a three (3) year full product warranty.

The battery shall have a one (1) year warranty.

The (optional) RF Control shall have a one (1) year warranty.