

Solar Powered Flashing Beacon Specifications



Technical Data Sheet

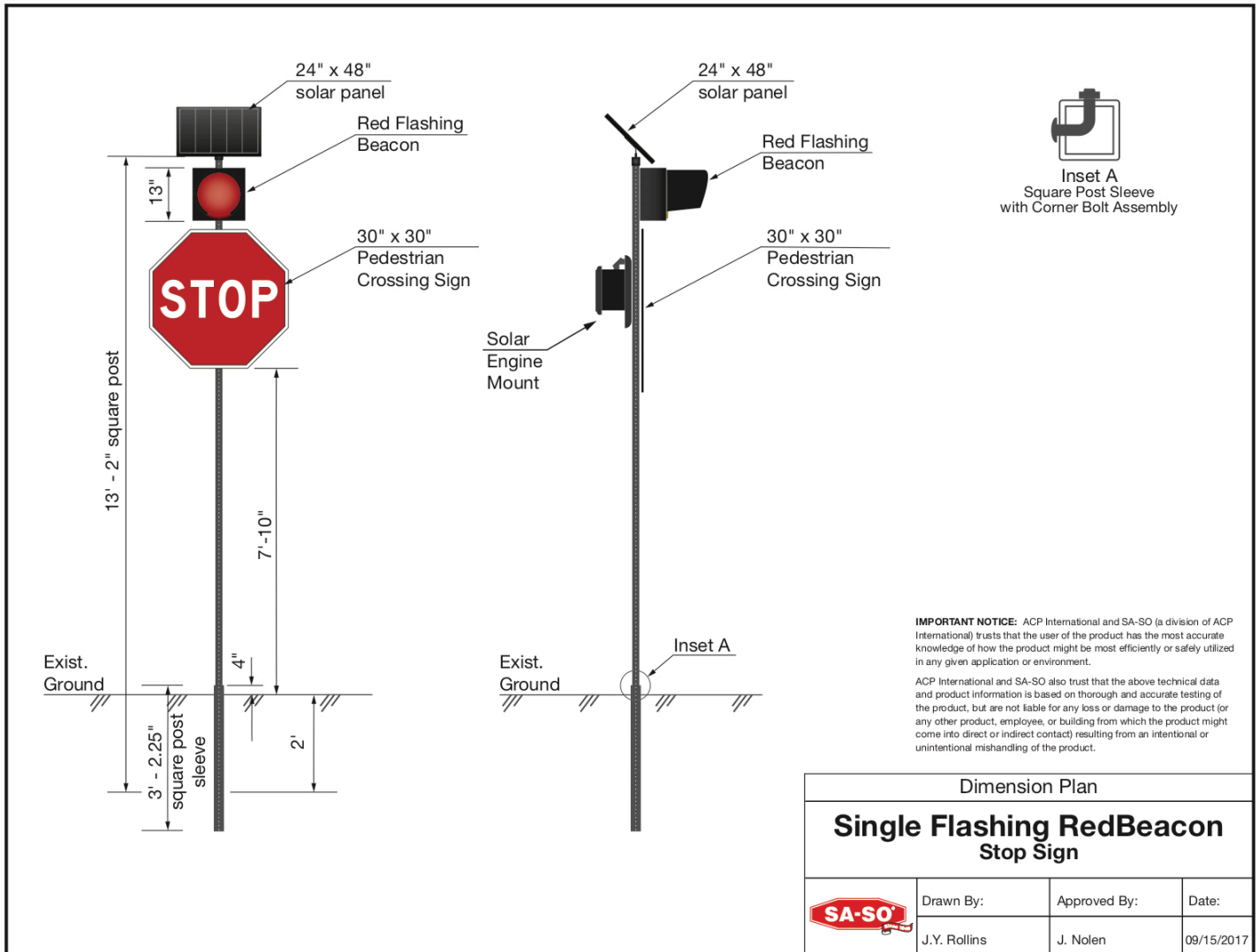
Part

HD302A Solar Single Beacon Amber
 HD302R Solar Single Beacon Red
 HD304A Solar Double Beacon Amber

HD303A AC Power Single Beacon Amber
 HD303R AC Power Single Beacon Red

Scope

This specification covers the method and procedures of the physical dimensions and performance properties of the Solar Powered Flashing Beacon as manufactured by SA-SO of Arlington, Texas.



Technical Description, Design, and Material

Technical Description:

The HD302 Solar Powered Flashing Beacon is a single, 12", 24/7 flashing beacon, with 50-60 flashes per minute, powered by a 12v Lithium Ion Battery and 30 watt Solar Panel. Standard colors are Red and Amber.

The HD304 is two HD302 beacons configured to flash in a wig-wag pattern.

General Design and Operation:

A Flashing Beacon is a highway traffic signal with one or more signal sections that operates in a flashing mode. It can provide traffic control when used as an intersection control beacon (see Section 4L.02) or it can provide warning when used in other applications (see Sections 4L.03, 4L.04, and 4L.05).

Standard mounting of the HD302 is on a 1.75" or 2" Square post or a 2.375" Round Post.
Typical length of Post: 12'.

Typical applications and restrictions of Warning Beacons include the following:

- A. At obstructions in or immediately adjacent to the roadway;
- B. As supplemental emphasis to warning signs;
- C. As emphasis for mid-block crosswalks;
- D. As supplemental emphasis to regulatory signs.
- E. In conjunction with a regulatory or warning sign that includes the phrase WHEN FLASHING in its legend to indicate that the regulation is in effect only at certain times.
- F. If suspended over the roadway, the clearance shall be a minimum of 15' and maximum of 19'.
- G. If used at intersections, warning beacons shall not face conflicting vehicular approaches.

References:

Federal Highway Administration. "MUTCD 2009 Edition, Dated December 2009 (PDF) - FHWA MUTCD." Manual on Uniform Traffic Control Devices (MUTCD) - FHWA. N.p., n.d. Web. 29 Jan. 2015.

Dimensions

Activation Options:

The base HD302 is a 24/7 Flashing Beacon with a manual on/off switch.

Activation options include:

- A. SolarSync cellular activation system

B. Wireless key fob activation (900 ft maximum distance)

Mechanical Properties

LED Beacon (Housing and LED Ball)

DOT Approval CalTrans DOT AML LED Traffic Signal: Leotek Incandescent 12'' IL6Series 10-28 Vdc LED Signal Ball

Dimensions for 12" Ball: 13.5"H x 13.5"W x 7.0"D

Housing Material: Polycarbonate, UV stabilized, flame retardant, permanently colored, 10% fiberglass reinforcement

Housing Color: Black

Environmental Operating temperature: -37° C to +74° C

Humidity: 0 to 95% (non-condensing)

Signal housing GasketWeathertight E.P.D.M. rubber door gasket

Red LED Wattage: 4.4 Watts (@ 12 VDC)

Yellow LED Wattage: 10 Watts (@ 12VDC)

Dominant Wavelength for Red LED: 626

Dominant Wavelength for Yellow LED: 589

Maintains 70% of the initial lumen intensity after 100,000 hours of operation

Weathertight E.P.D.M. rubber door gasket

Stainless steel door roll pins and eye bolt/wing nut assemblies

One-piece, injection molded with reinforcing ribs, top and bottom

NEMA TS2 Transient Voltage Protection over 2000V

Complies with FCC title 47, Subpart B section 15 for Radiated Emission

Meets and/or exceeds ITE VTCSH LED Circular Signal Supplement dated June 27th 2005

MIL-STD-810F Moisture Resistant

MIL-STD-833 Mechanical Vibration

All electronics are located in the beacon housing.

Solar Panel Properties:

Monocrystalline 30W Panel

Maximum Power: 30W

Optimum Operating Voltage (Vmp): 17.5V

Optimum Operating Current (Imp): 1.71A

Weight: 6.2 lbs.

Maximum System Voltage: 600V DC (UL)

Open-Circuit Voltage (Voc): 21.6V

Short-Circuit Current (Isc): 1.85A

Dimensions: 13.5 X 23.8 X 1.0 In

Glass: 3.2 mm tempered glass,

Resists 5400 PA snow loads and 2400 PA wind load.

Film:main component is 30%-33% EVA, coated with fluoro-resin to prevent aging.

Frame: Corrosion-resistant aluminum

Mounting Bracket: Corrosion-resistant aluminum

Battery Properties:

12.6v Rechargeable Lithium-Ion (Li-ion) battery pack

20.8 Ah Capacity

Built in IC chip to prevent over charge and over discharge

3000 Cycle Life Expectancy

8 month Shelf Life exceeds NiMH batteries
High Temperature Tolerance: 60C

Special Properties

Solar Charge Controller Properties:

99% efficient MPPT tracking (15Hz Speed)
Operating Consumption of 0.150mA (150uA)
CC-CV Charging Profile
-40°C to 85°C Operating Temperature
99.85% Electrical Efficiency

Flasher Properties:

Solid State
Fixed Flash Rate: 60 flashes per minute
4 amp maximum load

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