BlinkerSign® Light-Emitting Diode (LED) Sign: Solar-powered Version, enhanced with Day-Viz® LEDs TAPCO Part # 2180-C00141 R1-1, 36" DG3 BlinkerStop, Solar, 24/7, Double Post Mount

1.0 Description

The Manufacturer shall provide a solar-powered BlinkerSign® LED-enhanced sign assembly. This sign's high-intensity Day-Viz® LEDs are visible in all weather and ambient light conditions to increase the conspicuity of the sign. AutoBright™ control circuitry monitors ambient light levels throughout the day and night, and automatically regulates the brightness of the LED array to provide optimum visibility.

The BlinkerSign® LED-enhanced sign is fully compliant with the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD). The LED array's color and shape help to convey the sign type to roadway users, both day and night.

BlinkerSign® LED-enhanced signs use 3M™ DG3 prismatic sheeting to provide maximum retroreflectivity, and anti graffiti overlay film for protection.

Materials: The Day-Viz® Blinkersign® assembly shall include the following items:

1. Sign

a. All signs shall conform to 2009 Federal Highway Administration's MUTCD section 2A.07 on retroreflectivity and illumination. MUTCD standards.

b. The sign face shall be a R1-1 sign (STOP), 36", with 8 Red LEDs.

c. All signs blanks shall be .080" gauge aluminum minimum.

d. Sheeting used shall be 3M™ DG3 diamond grade prismatic sheeting, unless required with a lower grade of reflectivity and include anti-graffiti overlay protection.

e. All sign assemblies shall use anti-vandal fasteners to mount components to sign and sign to fixture (TAPCO Part # 2438-00001).

f. All sign assemblies shall be TAPCO # 2180-C00141.

g. All sign assemblies to be "double post mounted" (posts sold separately).

2. LEDs

a. Each sign assembly shall consist of up to 8 high power 1 watt Luxeon® LEDs that provide a maximum light intensity of up to 600,000mcd (millicandelas) with a viewing angle of 15°.

b. All LEDs shall match the color of the background or border, as per section 2A.07 of the MUTCD.

c. Each LED shall be sealed in 7/8" diameter, heat dissipating plastic enclosure to provide resistance to weather and vibration.

d. All LED enclosures shall be mounted in a 1" hole and ultrasonically welded to the sign assembly to provide maximum strength and rigidity.

e. All LEDs shall be wired in strings to activate simultaneously per MUTCD standards and wired in a manner (parallel) that all LEDs continue to flash in the event of failure of an individual LED.

f. All wire used shall conform to military specifications, MIL-W-16878D, Type D, vinyl nylon jacket.

g. Wiring shall be encapsulated inside a 1" x 3/8" aluminum extrusion secured to the sign assembly, to provide weather resistance and protection.

h. All LED connectors shall conform to Ingress Protection, IP-67 rating, dust proof, and protected from temporary immersion in water up to 1 meter deep for 30 minutes. Connectors shall be Deutsch DTM series.

i. All LEDs shall be TAPCO # 3012.

3. Solar Panel

a. All solar panels shall be up to 13.5" x 15" in size and provide up to 13.5 watts peak total output sized for all climate and geographical locations.

b. All panels shall be mounted to an aluminum plate and bracket at an angle of 45°- 60° to provide maximum output. Bracket shall be secured to a 2-3/8" aluminum tube. (NOTE: COLLECTOR MUST FACE SOUTH)

c. All fasteners used shall be anti-vandal.

d. Wire used shall conform to military specifications, MIL-W-16878D, Type D, vinyl nylon jacket.

e. The solar panel assembly shall be mounted directly to the back of the sign assembly and be a fully self contained onto a 2-3/8" OD round aluminum housing.

f. All solar panel connectors shall conform to Ingress Protection, IP-67 rating, dust proof, and protected from temporary immersion in water up to 1 meter deep for 30 minutes. Connectors shall be Deutsch DTM series.

g. All solar panels shall be TAPCO # 2772-2.

4. Control Circuit

a. The control circuit shall have the capability of independently flashing dual outputs. The flashing output current and duty cycle shall be programmable.

b. The flashing output shall be 50 to 60 flashes per minute with 100msec duration on time. The outputs shall reach the output current as programmed for the duration of the 100msec pulse.

c. The output current shall be individually programmable for day and night time operation. The day and night time mode will automatically be determined by solar panel charge input and adjust to match ambient lighting conditions.

d. The controller shall provide 6 levels of brightness control determined by ambient conditions.

e. The controller will manage the battery charge and LED brightness levels in order to accommodate 30 days of continuous use without any charge.

f. The control circuit shall be potted in a cylindrical epoxy resin housing to be waterproof and housed in a 2-3/8" aluminum tube.

g. The control circuit shall operate between the temperatures of -40° to +176°F (-40° to +80°C).

h. All circuit connectors shall conform to Ingress Protection, IP-67 rating, dust proof, and protected from temporary immersion in water up to 1 meter deep for 30 minutes. Connectors shall be Deutsch DTM series.

i. The control circuit shall be TAPCO # 3204.

5. Battery

a. Battery packs shall be 4.8 volt 14000mAH Nickel Metal Hydride (NiMH). Battery dimensions shall be 10.5" x 1.5" x 1.5".

b. All batteries shall be sealed in a plastic film to provide resistance to moisture and corrosion, and shall be housed in a 2-3/8" aluminum tube.

c. All batteries shall operate between the temperatures of -40° to +176°F (-40° to +80°C).

d. All batteries shall have fusing between each cell and shall be protected from overheating by means of a thermocouple sensor.

e. All battery connectors shall conform to Ingress Protection, IP-67 rating, dust proof, and protected from temporary immersion in water up to 1 meter deep for 30 minutes. Connectors shall be Deutsch DTM series.

f. All batteries used shall be TAPCO # 2795-3

Warranty:

Manufacturer shall offer a two-year unconditional warranty against all defects in material and workmanship.