R820-E

Solar-Powered Circular Beacon Data Sheet

carmanah®

Circular flashing crosswalk beacons improve pedestrian safety by increasing yield rates at unsignalized, marked crosswalks:

- ✔ The R820-E meets MUTCD requirements and is Buy America compliant
- ✔ Compact and lightweight solar engine
- ✔ Audible pushbutton activation with all ADA compliance features
- ✔ Solar Power Report™ (SPR) prepared for every location to ensure battery longevity

Superior Design and Technology

The R820-E utilizes a self-contained solar engine integrating the Energy Management System (EMS) with an on-board user interface, housed in a compact enclosure together with the batteries and solar panel. MUTCD flash patterns, available ITE intensity, and multiple configurations enable the R820-E to handle all crosswalk applications.

Easy Installation

With its highly efficient and compact design, installation is quick and uncomplicated, dramatically reducing installation costs. Retrofitting can be done where existing sign bases are used to enhance existing marked crosswalks in minutes, and new installations can be completed without the cost of larger poles, new bases, and trenching.

Advanced User Interface

The R820-E comes with an on-board user interface for quick configuration and status monitoring. It allows for simple in-the-field adjustment of flash pattern, duration, intensity, ambient auto adjust, night dimming, and many more. Settings are automatically sent wirelessly to all units in the system.

Reliable

Every solar-powered model is solar-sized by location to ensure year-after-year operation. Carmanah includes a Solar Power Report to prove sustainability over a 12-month period.

MUTCD compliant

Buy America compliant

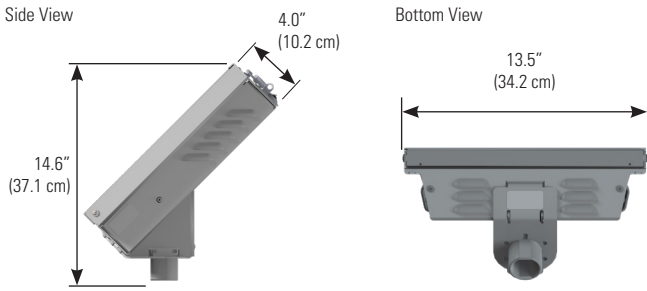**5-year limited warranty**

Solar-sized for every location

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SOLAR ENGINE DIMENSIONS

Side View

4.0"
(10.2 cm)

14.6"
(37.1 cm)

Bottom View

13.5"
(34.2 cm)

SOLAR ENGINE MOUNTING

2.0"- 2.5" Perforated Square Pole Mount

2.38" - 2.88" Diameter Round Pole Mount

3.5" - 4.5" Diameter Round Pole Mount

Side Pole Mount

BEACON MOUNTING

Single – Integrated Engine and Beacon

Single

Dual – Vertical

Dual – Horizontal Back-to-back

Dual – Horizontal

Quad – Horizontal
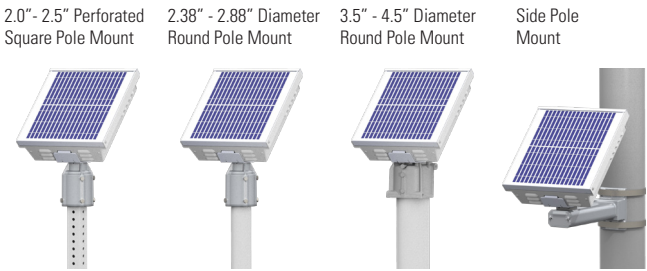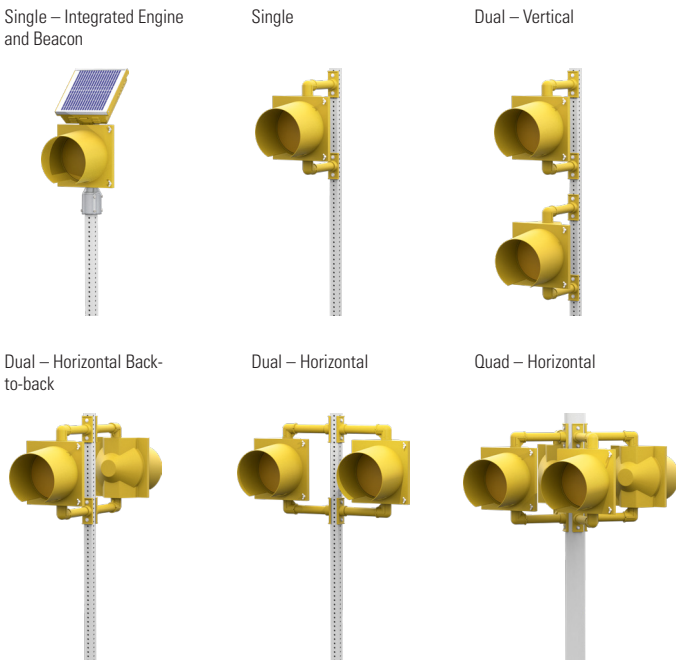
Other beacon mounting options are available. Contact Carmanah for more information.

BEACON SPECIFICATIONS

Optical	MUTCD compliant: 2009 MUTCD, Chapter 4L, Flashing Beacons, Manual on Uniform Traffic Control Devices (MUTCD)
	ITE VTCSH-LED Circular Signal Supplement compliant: meets ITE or 1.7x ITE intensity when used as recommended
	12 in (305 mm) or 8 in (203 mm) diameter LED modules, yellow
	High-power LEDs: +90% lumen maintenance (L90) based on IES LM-80
	Yellow, black, or green signal heads in UV-resistant polycarbonate or aluminum

SYSTEM SPECIFICATIONS

On-Board User Interface (OBUI)	Adjustable system settings with auto-scrolling LED display on our latest EMS
	System test, status, and fault detection: battery, solar, button, beacon, radio, day/night
	Flash patterns: RFB (WW+S), RFB1 (WW+S legacy), RFB2 (WSDOT), 0.5 sec. alternating (MUTCD), 0.5 sec. unison (MUTCD), 0.5 sec. x3 alternating (MUTCD), 0.1 sec. unison, 0.25 sec. unison, 0.1 sec. x3 quick flashes unison, 0.1 sec. x3 quick flashes alternating, steady on
	Input: momentary for pushbutton activation, normally open switch, normally closed switch, dusk-to-dawn operation
	Flash duration: 5 sec. to 1 hr.
	Intensity setting: 20 to 1400 mA for multiple RRFBs, circular beacons, or LED enhanced signs
	Nighttime dimming: 10 to 100% of daytime intensity
	Ambient Auto Adjust: increases intensity during bright daytime
	Automatic Light Control: reduces intensity if the battery is extremely low
	Temperature correction: yellow beacons
	Calendar: internal time clock function
	Radio settings: enable/disable, selectable channel from 1 to 14
	Output: enabled when beacons flashing daytime and nighttime, or nighttime only
	Activation counts and data reporting via OBUI or optional USB connection
Beacon Communication	Encrypted, wireless radio with 2.4 GHz mesh technology
	Wireless update of settings from any unit to all systems on the same radio channel
	User-selectable multiple channels to group different beacons and ensure a robust wireless signal
	Communicates with all other Gen III radio-enabled systems including our R920-E, R920-F, and SC315-G RRFBs
	Instantaneous wireless activation: <150 ms
	Wireless range: 1000 ft (305 m)
	Integrated, vandal-resistant antenna
Energy Collection	15 W high-efficiency photovoltaic solar panel
	45 deg tilt for optimal energy collection
	Maximum Power Point Tracking with Temperature Compensation (MPPT-TC) battery charger for optimal energy collection in all solar and battery conditions
Energy Storage	12 V 14 Ahr. battery system
	Replaceable, recyclable, sealed, maintenance-free, best-in-class AGM batteries offer the widest temperature range and longest life
	Battery design life: +5 yrs.
	Tool-less battery change with quick connect terminals and strapping for easy installation
Solar Engine Construction	Weatherproof, gasketed enclosure with vents for ambient air transfer (NEMA 3R)
	Lockable, hinged lid for access to on-board user interface and batteries
	Corrosion-resistant aluminum with stainless steel hardware
	Raw aluminum finish or yellow, black, or green powder coated
	Prewired to minimize installation time
	High-efficiency optics and EMS = the most compact, lightweight system
	19 lb (8.6 kg) including batteries, excluding beacons and pushbutton
Environmental	-35 to 165° F (-37 to 74° C) system operating temperature
	-40 to 140° F (-40 to 60° C) battery operating temperature
	150 mph (241 kph) wind speed as per AASHTO LTS-6
Activation	Pushbutton: ADA-compliant, piezo-driven with visual LED and two-tone audible confirmation
	Audible pushbutton station: ADA-compliant, piezo-driven with visual LED and customizable voice message confirmation
Warranty	**5-year limited warranty, 1-year limited on batteries**