

# R820-F

## Solar-Powered Circular Beacon Data Sheet



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

- ✓ The R820-F meets MUTCD requirements and is Buy America compliant
- ✓ Compact and lightweight solar engine
- ✓ Audible pushbutton or passive pedestrian activation
- ✓ Solar Power Report™ (SPR) prepared for every location to ensure battery longevity

### Superior Design and Technology

The R820-F 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. A larger solar engine enables the R820-F to work with audible pushbutton stations, passive activation sensors, and remote monitoring, as well as operate at higher intensities and increased activations in challenging environments.

### 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-F 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**

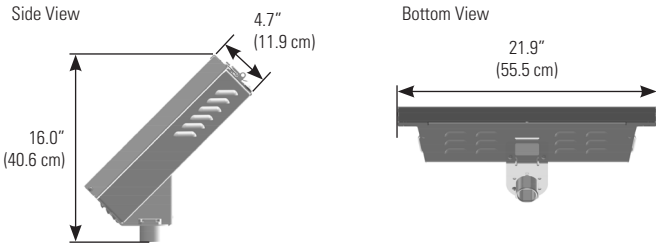
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### SOLAR ENGINE DIMENSIONS



### 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



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 E.g., for relay control of overhead lighting	
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
Energy Collection	Wireless range: 1000 ft (305 m)
	Integrated, vandal-resistant antenna
	30 W high-efficiency photovoltaic solar panel
Energy Storage	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
	12 V 36 Ahr. battery system
	Replaceable, recyclable, sealed, maintenance-free, best-in-class AGM batteries offer the widest temperature range and longest life
Solar Engine Construction	Battery design life: +5 yrs.
	Tool-less battery change with quick connect terminals and strapping for easy installation
	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	
Environmental	39 lb (17.7 kg) including batteries, excluding beacons and pushbutton
	-35 to 165° F (-37 to 74° C) system operating temperature
	-40 to 140° F (-40 to 60° C) battery operating temperature
Activation	150 mph (241 kph) wind speed as per AASHTO LTS-6
	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	Passive activation: microwave-based sensor detects pedestrian
	<b>5-year limited warranty, 1-year limited on batteries</b>

**Specifications subject to local environmental conditions, and may be subject to change.**

All Carmanah products are manufactured in facilities that are certified to ISO quality standards.

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