

# 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**

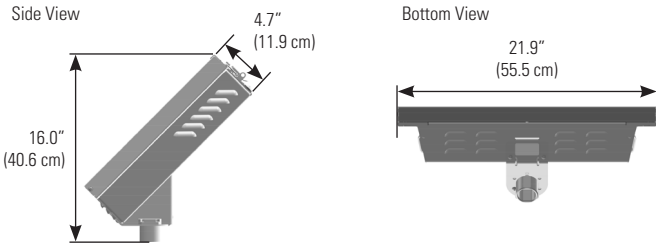
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### SOLAR ENGINE DIMENSIONS



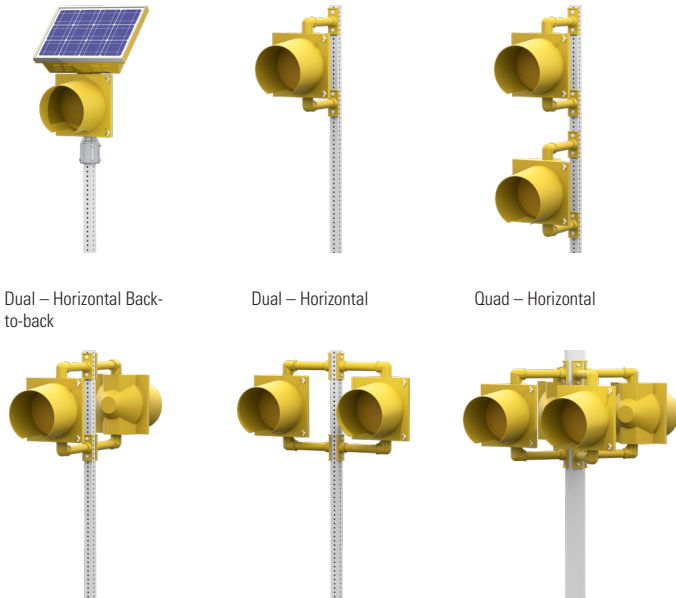
### SOLAR ENGINE MOUNTING

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<br>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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