

# R829-F

## Solar-Powered School Zone Flashing Beacon Data Sheet



### Beacons decrease vehicle speeds by 5 to 7 mph in school zones:

- ✓ Highest intensity output in the industry
- ✓ MUTCD and Buy America compliant
- ✓ Compact and lightweight solar engine
- ✓ Solar Power Report™ (SPR) prepared for every location to ensure battery longevity

### Superior Design and Technology

The R829-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 R829-F to work with third-party time clocks and remote monitoring, as well as operate at higher intensities 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 school zones and speed limit signs in minutes, and new installations can be completed without the cost of larger poles, new bases, and trenching.

### Calendar Operation

Schedule beacon operation with our easy software-based calendar program, or use third-party time clocks for local or remote control.

### Advanced User Interface

The R829-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. Optional wireless connection enables one beacon's calendar settings to control multiple school zone beacons.

### 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

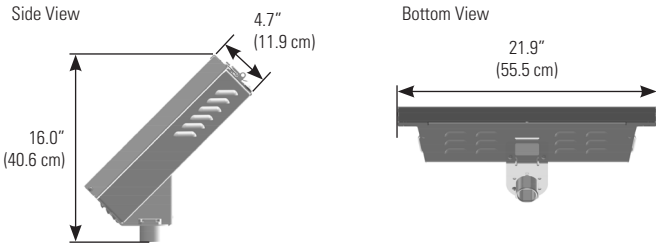
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1.844.412.8395 | traffic@carmanah.com | carmanah.com



### SOLAR ENGINE DIMENSIONS



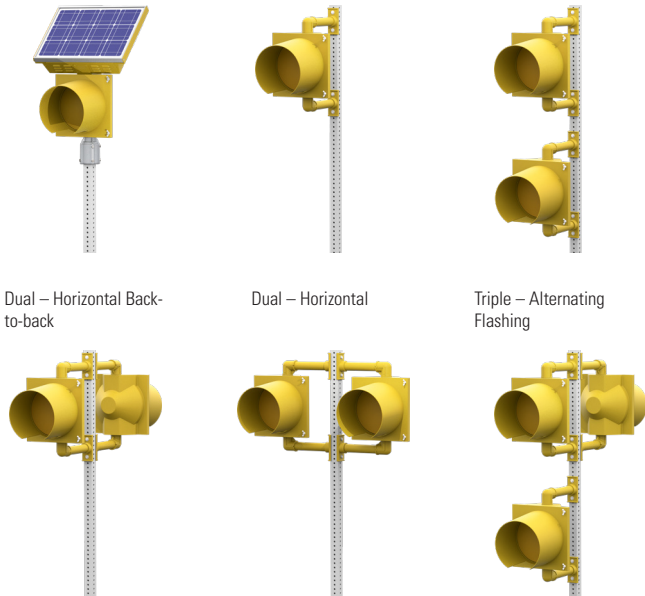
### SOLAR ENGINE MOUNTING

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 VTCSS-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 (OBU) | 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 RFBs, 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  |
| Beacon Communication          | 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 OBU or optional USB connection   |
|                               | Optional encrypted, wireless radio with 2.4 GHz mesh technology   |
|                               | Optional radio allows calendar program, manual override switch, or input device from one system to remotely control other systems   |
|                               | User-selectable multiple channels to group different beacons and ensure a robust wireless signal  |
|                               | Instantaneous wireless activation: <150 ms  |
|                               | Wireless range: 1000 ft (305 m)   |
|                               | Integrated, vandal-resistant antenna  |
| Energy Collection             | 30 W high-efficiency photovoltaic solar panel   |
|                               | 45 deg tilt for optimal energy collection   |
| Energy Storage                | 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  |
| Environmental                 | Prewired to minimize installation time  |
|                               | High-efficiency optics and EMS = the most compact, lightweight system   |
|                               | 39 lb (17.7 kg) including batteries, excluding beacons and pushbutton   |
|                               | -35 to 165° F (-37 to 74° C) system operating temperature   |
| Activation                    | -40 to 140° F (-40 to 60° C) battery operating temperature  |
|                               | 150 mph (241 kph) wind speed as per AASHTO LTS-6  |
|                               | Internal time clock: calendar programming via our simple software   |
|                               | Also compatible with 3rd-party time clocks: <ul style="list-style-type: none"> <li>Applied Information AI 500-070B</li> <li>Temple FCU 500-071 (FL only)</li> <li>RTC AP21, AP22, CPR2102, and M2M modem</li> </ul> Other time clocks may also be compatible.               |
|                               | Manual override switch: allows local control of beacons   |
| Warranty                      | Junction box: lockable, hinged door, corrosion-resistant aluminum enclosure allows easy calendar programming and access to manual override switch   |
|                               | <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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