MUTCD-compliant, pedestrian-activated warning beacon for uncontrolled marked crosswalks

- Improve pedestrian safety by increasing driver yield rates
- Ultra-efficient optics and Energy Management System (EMS)
- Compact design to simplify installation
- Proven technology platform
- Meets and exceeds MUTCD requirements

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 push button 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
Designed with Carmanah’s industry-leading solar modeling tools to provide dependable year-after-year operation.

Trusted
With thousands of installations, Carmanah’s beacons are the benchmark in traffic applications and other transportation applications worldwide.
R820-F
SOLAR CROSSWALK FLASHING BEACON

1.844.412.8395 | traffic@carmanah.com | carmanahtraffic.com

**DIMENSIONS**

<table>
<thead>
<tr>
<th>Side View</th>
<th>Bottom View</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.0&quot; (40.6 cm)</td>
<td>21.9&quot; (55.5 cm)</td>
</tr>
</tbody>
</table>

**SOLAR ENGINE MOUNTING**

- 2.0" - 2.5" Perforated Square Pole Mount
- 2.38" - 2.88" Diameter Round Pole Mount
- 4.0" - 4.5" Diameter Round Pole Mount
- Side Pole Mount

**BEACON MOUNTING**

- Single – Integrated Engine and Beacon
- Single
- Dual – Vertical
- Dual – Horizontal Back-to-back
- Quad – Horizontal

*Other solar engine and beacon mounting configurations are available.*

**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. US Patent No 6,573,659. Other patents pending.

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Document: SPEC_TRA_R820-F_RevA

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: R911 (WW+S), R922 (WSDOT), 0.5 sec. alternating (MUTCD), 0.5 sec. unison (MUTCD), 0.1 sec. unison, 0.25 sec. unison, 0.1 sec. x3 quick flashes unison, 0.1 sec. x3 quick flashes alternating

Input: momentary for push button activation, normally open switch, normally closed switch

Flash duration: 5 sec. to 1 hr.

Intensity setting: 20 to 1400 mA for multiple circular beacons, RRFBs, 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 or red 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

MUTCD compliant: 2009 MUTCD, Chapter 4L, Flashing Beacons, Manual on Uniform Traffic Control Devices (MUTCD)

ITE VTSCH-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

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

Connectivity: Communicates with all other Gen III radio-enabled systems including our R920-E, R920-F, and SC315 RRFBs

Instantaneous wireless activation: <150 ms

Wireless range: 1000 ft (305 m)

Integrated, vandal-proof antenna

Energy Collection:

- 30 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 34 Ah, 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
- 39 lb (17.7 kg) including batteries, excluding beacons and push button

Environmental:

- -40 to 165°F (-40 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:

- Push button: ADA-compliant, piezo-driven with visual LED and two-tone audible confirmation
- Audible push button station: ADA-compliant, piezo-driven with visual LED and customizable voice message confirmation
- Passive activation: microwave-based sensor detects pedestrian

Warranty:

5-year limited warranty