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

- The R920-F is the benchmark for Rectangular Rapid Flashing Beacons (RRFBs)
- Ultra-efficient optics and Energy Management System (EMS)
- Compact design to simplify installation
- Proven technology platform
- Meets and exceeds MUTCD requirements, including IA-21

RRFBs have been found to provide vehicle yielding rates between 72 and 96 percent for crosswalk applications, including 4 lane roadways with average daily traffic (ADT) exceeding 12,000*.

Superior Design and Technology
The R920-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 R920-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 R920-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.

* U.S. Department of Transportation Federal Highways Administration, Publication No. FHWA-HRT-10-043 - “Effects of Yellow Rectangular Rapid-Flashing Beacons on Yielding at Multilane Uncontrolled Crosswalks”
R920-F
RECTANGULAR RAPID FLASHING BEACON

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Bi-directional Configuration

5-year limited warranty

Uni-directional Configuration

Square Pole Mount
2.0” - 2.5” Perforated

Round Pole Mount
2.38” - 2.88” Diameter

4.0” - 4.5” Diameter

Side Pole Mount

IN-THE-FIELD AIMING

Light bar configuration

Uni-directional Configuration

Bi-directional Configuration

Dimensions

Side View

Bottom View

16.0” (40.6 cm)

4.7” (11.9 cm)

21.9” (55.5 cm)

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

Light Bar Configuration

On-Board User Interface

On-Board User Interface (OBUI)

Connection

Solar Engine Construction

Environmental

Activation

Warranty

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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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: RFB1 (WW+S), RFB2 (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 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 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 interim approval IA-21 and MUTCD compliant
Purpose-built light bar optics = maximum efficiency and no stray light
Exoeds SAE J595 class 1 intensity by 2.5 to 3x when used as recommended
Meets SAE J578 chromaticity
3 in (76 mm) x 7 in (178 mm) clear, UV-rated polycarbonate lens with yellow LEDs
High-power LEDs: >60% lumen maintenance (L90) based on IES LM-80
Side-emitting pedestrian confirmation LEDs
Independent, stainless steel mounting brackets make back-to-back installation simple and enable in-field aiming for maximum effectiveness
Yellow, black, or green powder coated light bar covers

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 R820-E, -F, and -G circular beacons
Instantaneous wireless activation: <150 ms
Wireless range: 1000 ft (305 m)
Integrated, vandal-proof antenna

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
12 V 34 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

Weatherproof, gas-tight 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

-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
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

5-year limited warranty