

***Automated Red Light Enforcement Data Sheet  
Redding Police Department***

This information sheet is designed to describe the requirements of the Vehicle Code regarding automated red light enforcement and to describe how the system works.

**A. California Vehicle Code 21455.5 through 21455.7**

California Vehicle Code sections 21455.5 to 21455.7 place requirements on municipal agencies wanting to operate automated red light enforcement systems.

21455.5 (a) The intersections of Cypress & Bechelli, Market & Shasta, Market & Lake, Pine & Tehama, and Hilltop & Cypress have been equipped with an automated red light camera systems. These systems are identified by photo enforcement signs of the size and design required by the California Department of Transportation (Caltrans) regulations, clearly indicating the system's presence and is visible to traffic approaching from all directions.

21455.5 (b) A public announcement in the form of a press release was made by the Redding Police Department announcing a program to issue warning notices for 30 days for the following intersections to implement red light enforcement cameras:

- Cypress Avenue and Bechelli Lane September 1, 2007
- Shasta Street and Market Street February 21, 2008
- ~~Churn Creek Road and Cypress Avenue~~ ~~May 31, 2008~~
- Market Street and Lake Boulevard January 5, 2009
- Pine Street and Tehama Street February 10, 2009
- Hilltop Drive and Cypress Avenue March 31, 2015

21455.5 (c) The City of Redding in cooperation with the Department has chosen to operate a red light enforcement program in compliance with 21455.5 (c) in that:

- The Department has developed a Redding Police Department Instruction for the uniform guidelines for employees to screen and issue citations.
- The Department has maintained responsibility for the selection of the locations of the intersections where the program will operate.
- The Department maintains a monthly inspection log where employees check to ensure the signs are maintained as required, and confirm the yellow light phase is compliant.

21455.5 (d) As allowed by this section the Department has delegated responsibility to Redflex Traffic Systems for:

- Ensuring the equipment is regularly inspected by Redflex Traffic System technicians, and
- Certifying the equipment is properly installed, calibrated, and is operating properly.

21455.5 (g) The Department maintains public viewing hours Monday through Wednesday from 0900 to 1200 hours when any alleged violator may review the photographic evidence of the alleged violation.

21455.5 (h) The contract between Redflex Traffic Systems and the City of Redding does not include provision for the payment or compensation based upon the number of citations issued or as a percentage of the revenue generated.

21455.6 (a) A public hearing was conducted by the Redding City Council on February 6, 2007 on the use of automated enforcement systems prior to the authorization to enter into a contract with Redflex Traffic Systems.

21455.7 The minimum yellow light change interval has been set in compliance with the California Manual on Uniform Traffic Control Devices (MUTCD) as follows:

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<b>Intersection</b>	<b>85<sup>th</sup> %</b>	<b>Speed Limit</b>	<b>Through Traffic</b>	<b>Left Turn</b>
Cypress & Bechelli (E/B)	40	35	3.9 seconds	3.0 seconds
Cypress & Bechelli (W/B)	35	30	3.9 seconds	3.0 seconds
Market & Shasta	N/A	30	3.7 seconds	N/A
Shasta & Market	N/A	25	3.7 seconds	N/A
<del>Churn Creek &amp; Cypress</del>	<del>N/A</del>	<del>35</del>	<del>4.3 seconds</del>	<del>3.0 seconds</del>
Market & Lake	N/A	50	5.2 seconds	3.7 seconds
Pine & Tehama	N/A	30	3.7 seconds	N/A
Cypress & Hilltop	35	30	3.9 seconds	3.0 seconds
Hilltop & Cypress	40	35	3.9 seconds	3.9 seconds

**B. The Redflex Red Light System**

The Redflex Smartcam Camera system is connected to the traffic signal controller and is active only during the red light phase. It is inactive during the green and yellow signal phases. During the red light phase, when the system detects a violation, the system activates and three digital cameras record four separate images. The date, time, time into the red cycle, location, detected vehicle speed and posted speed limit are encrypted and embedded into the images via a data bar shown at the top of each image. The four images consist of:

- Scene A - showing the vehicle behind the limit line with the traffic signal red.
- Scene B - showing the vehicle through the intersection.
- Face Image - showing the operator of the vehicle.
- Plate Image - showing the license number of the vehicle.

Additionally, each intersection is equipped with a digital high-definition video camera. When a violation is detected, the video camera stores approximately 12 seconds video of the violation. The video sequence is encrypted and filed with the still photo evidence.

**RADAR Detection:** The camera system uses RADAR detection to track the speed and distance of all vehicles as they approach an intersection. Phase Mono-Pulse RADAR technology is used to track each vehicle approximately 20 times per second. Any vehicle traveling equal to or greater than the preset threshold speed of 10 mph when it crosses the limit line will activate the system and trigger the sequence of images described above. This will only occur after signal has entered the red phase.

**Loop Sensor Detection:** The camera system will only capture images when a vehicle crosses over a set of magnetic loop sensors positioned 11-feet prior to the limit line with a minimum speed of 15 mph. The threshold speed of 15 mph was chosen because through mathematical formulas, most vehicles cannot stop within 11 feet from a speed of 15 mph. The loop sensors determine the speed of the vehicle by using the equation “speed = distance/time.” The speed is only used for the purposes of timing of the camera flashes and timing between image capture.

After images of a potential violation are captured, they are sent via a 128 bit encrypted secure digital subscriber line (DSL) connection to Redflex Traffic Systems Data Center in Scottsdale, Arizona. Technicians at Redflex review the potential violations and screen them for quality assurance. Redflex technicians also look up the DMV registration and attempt to run a reverse match on the registered owner of the vehicle. This data is entered into a database linked to the four color photographs and 12-second video file. The data is then sent to Redding Police Department via a secure internet connection for review by Red Light Enforcement Specialists. Redding Police Department Red Light Enforcement Specialists are responsible for the final review and the decision of whether a citation will be issued.