Traffic Infraction Detector
Placement and Installation Specifications
January 29, 2015

Section 1.0 General

The "Mark Wandall Traffic Safety Act" was signed into law with an effective date of July 1, 2010. The law authorizes the use of Traffic Infraction Detectors, commonly known as red light running cameras, on state, county, and municipal roads, streets, and highways in the State of Florida.

Section 316.0776, Florida Statutes, was created and directs that placement and installation of Traffic Infraction Detectors must be in accordance with placement and installation specifications developed by the Florida Department of Transportation (FDOT).

The specifications described below establish such requirements for placement and installation of Traffic Infraction Detectors. (Placement on state roadways will also be subject to FDOT general use permit requirements and special provisions.)

Section 2.0 Placement and Installation Requirements

The following requirements apply to placement and installation of Traffic Infraction Detectors:

1. The placement and installation of Traffic Infraction Detectors or the required signs shall not reduce, impede, restrict, or obstruct driver view of any existing traffic control device placed at or on the approach to signalized intersections.

2. Where a traffic signal is interconnected to railroad active warning devices (railroad preemption), Traffic Infraction Detectors may not be installed.

3. Traffic Infraction Detectors may be installed at traffic signals located at entrance and exit ramps, except on the exit ramp approach to the traffic signal.

4. Above ground structures shall be breakaway and crashworthy in accordance with National Cooperative Highway Research Program (NCHRP) Report 350 or AASHTO's Manual for Assessing Safety Hardware (MASH) 2009 publication.

   Traffic Infraction Detectors shall not be located in medians or within sidewalks unless all other alternatives are deemed impractical. For sidewalks, at least 4 feet of sidewalk clearance must be provided. Any placements in sidewalks with less than 4 feet clearance must meet or exceed then-current minimum

American's with Disabilities Act (ADA) requirements and be approved by the State Traffic Operations Engineer for state roads, the County Engineer for county roads, or the Municipal Engineer for local roads (or their designees, respectively) For urban curb and gutter intersection approaches and posted speeds of less than or equal to 45 MPH, placement shall be located no closer than 4 feet from face of curb. No less than 2.5 feet from face of curb will be allowed only when all other alternatives are deemed impractical.
For all other intersection approaches, placement shall be located no closer than 12 feet from the travelled way, unless placed behind existing barrier.

5. Traffic Infraction Detectors that are connected to the traffic signal cabinet, traffic signal power service, or roadway lighting power service shall be equipped with lightning suppression and grounding devices.

6. Traffic signal controller timings for the yellow change interval shall be in accordance with the following provisions.

Yellow Change Interval Computation:

The Institute of Transportation Engineers (ITE) formula shall be used to calculate yellow change interval.

$$Y = t + \frac{1.47v}{2(a + Gg)}$$

Where:

Y= length of yellow interval, sec.
t = perception-reaction time (use 1.4 sec.)
v = speed of approaching vehicles, in mph.
a = deceleration rate in response to the onset of a yellow indication (use 10 ft/sec^2)
g = acceleration due to gravity (use 32.2 ft/sec^2)
G= grade, with uphill positive and downhill negative (percent grade /100)

A. A Perception Reaction Time (PRT) of 1.4 seconds shall be used.
B. Yellow change interval times shall be rounded up to the nearest 0.1 second.
C. Approach speed used in this section is the PSL for the approach being analyzed.
D. Yellow change intervals calculated to be lower than 3.4 seconds shall be set at no less than 3.4 seconds.
E. The yellow interval shall not exceed 6 seconds.

The Florida yellow change intervals shown in the Table 2 are computed using the ITE formula **(**found in ***ITE's Traffic Engineering Handbook***) with a PRT of 1.4 seconds and a grade of 0%. These intervals are the required standard minimum values. Any yellow change intervals that are greater than the standard yellow change intervals presented in Table 2 of this section, for a given posted speed limit (PSL), are allowed, but they shall

be based on Manual on Uniform Traffic Control Devices (*MUTCD) Section 4D.26*, engineering practice and the ITE formula. However, for a given PSL, the yellow change intervals shall not be less than the standard values presented in Table 2, even if the ITE formula produces a lower value.

Table 2. Florida Yellow Change Interval (0.0 % Grade) Standards*

APPROACH SPEED (MPH)	YELLOW INTERVAL (SECONDS)
25	3.4
30	3.7
35	4.0
40	4.4
45	4.8
50	5.1
55	5.5
60	5.9
65	6.0
* For approach grades other than 0%, use ITE Formula.	

7. All traffic signal timings must be prepared by or under the responsible charge of a Florida licensed Professional Engineer qualified to perform traffic signal timing.

8. Traffic Signal Photo Enforced signs meeting FDOT standards (see Attachment A) shall be posted in advance of each intersection approach equipped with a Traffic Infraction Detector and shall be shown accordingly on the construction plans. The supplemental panel with the legend “INCLUDES RIGHT TURN” shall be included on all Traffic Infraction Detector approaches where the right turn lane is controlled by the traffic signal. The Traffic Signal Photo Enforced sign shall be located on the right-hand side of the roadway far enough in advance of the stop line to provide adequate notice to approaching road users. On one-way streets or where a median of sufficient width is present, an additional Traffic Signal Photo Enforced sign may be placed on the left-hand side of the roadway. The Traffic Signal Photo Enforced sign shall be located such that it does not block or obscure the road user's view of other signs or traffic control devices.

9. An additional Traffic Signal Photo Enforced sign (see Attachment B) shall be mounted overhead on traffic signal mast arm structures or span wire assemblies. These signs shall be 36” x 30” in size. On all facilities, the signs shall be placed

on the horizontal portion of the traffic signal structures. The overhead sign shall be mounted towards the right side of the intersection approach.

All newly installed Traffic Infraction Detectors with initial activation on or after January 1, 2015 shall install the additional Traffic Signal Photo Enforced signs on each approach monitored by a Traffic Infraction Detector (Attachment B). All existing traffic signals with Traffic Infraction Detectors are not required to install the additional Traffic Signal Photo Enforced signs.

Below is guidance for advance placement of Traffic Signal Photo Enforced signs.

Advance Placement Distance (measured from the Stop Line)	
Speed MPH	Distance Ft. (minimum*)
20	100
25	125
30	150
35	200
40	250
45	300
50	350
55	400
60	450
65	500

*Minimum may be reduced by no more than 10% for features making it impractical to increase the distance.

10. Traffic Infraction Detectors shall not affect the traffic signal indication display or the operation of the traffic signal.

11. If a Traffic Infraction Detector uses a flash or illuminator device, it shall be mounted, positioned, filtered or angled to limit effects on the driver's visual field of view while entering or exiting the intersection.

Red Clearance Interval:

A red clearance interval must be used. Providing adequate red clearance intervals can significantly impact intersection safety by reducing the probability of occurrence of right angle crashes, even if drivers run the red signal indication. The red clearance interval shall be determined using engineering practices. Refer to MUTCD Section 4D.26.

Section 3.0 Public Awareness Campaign

Any county or municipality (or the Department of Highway Safety and Motor Vehicles) that begins a Traffic Infraction Detector enforcement program for the first time shall make a public announcement and conduct a public awareness campaign of the proposed use of Traffic Infraction Detectors at least 30 days before commencement of the enforcement program.

The Federal Highway Administration – Office of Safety has detailed information, guidance, and suggestions on how to conduct a red light camera public awareness campaign.

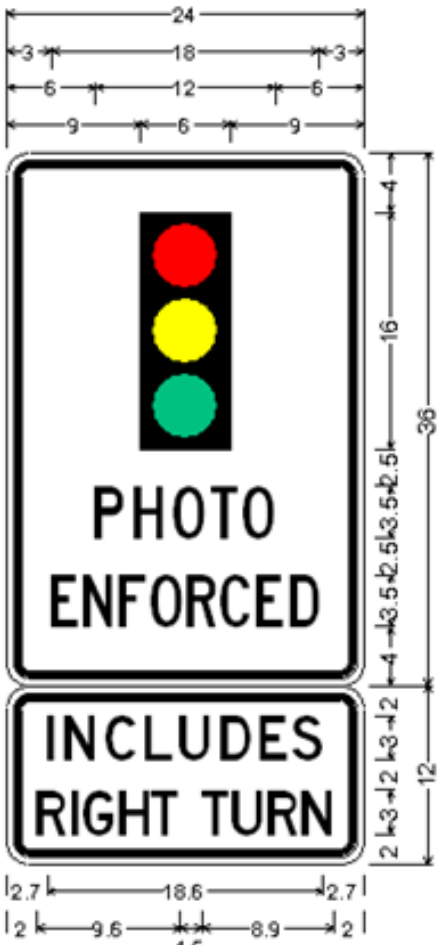
Below is a link to information from that technical resource:

http://safety.fhwa.dot.gov/intersection/redlight/

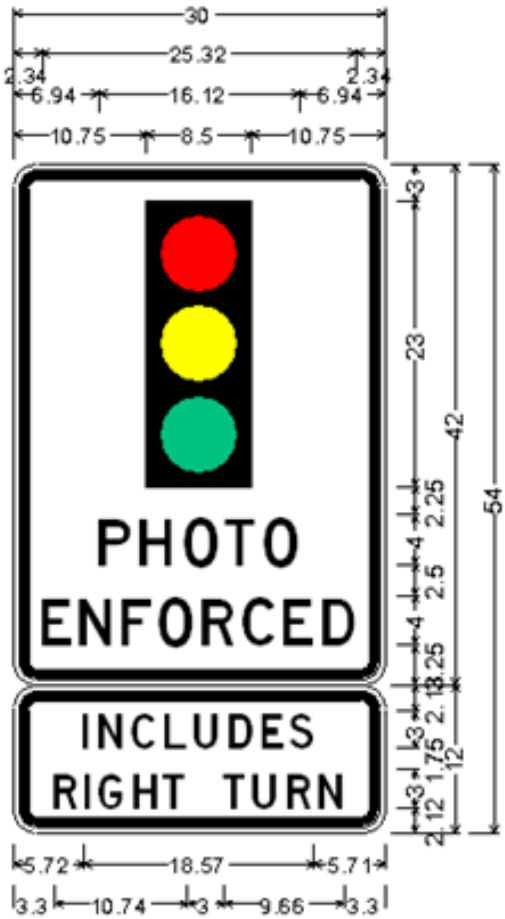
Outreach Support: Implementing a Stop Red-Light Running Program
Provides educational and outreach materials to help raise awareness about the dangers of red-light running including a Step-by-Step Guidebook for implementing a Stop Red-Light Running program or campaign, some ideas for how communities can support National Stop on Red Week, and supporting marketing materials such as presentations; public service announcement (PSA) scripts for radio and television; sample press releases; letters to support coalition-building and media support materials. http://safety.fhwa.dot.gov/intersection/redlight/outreach/

ATTACHMENT A

Sign sizes for less than 40 miles per hour and 40 mph or greater approach speeds.



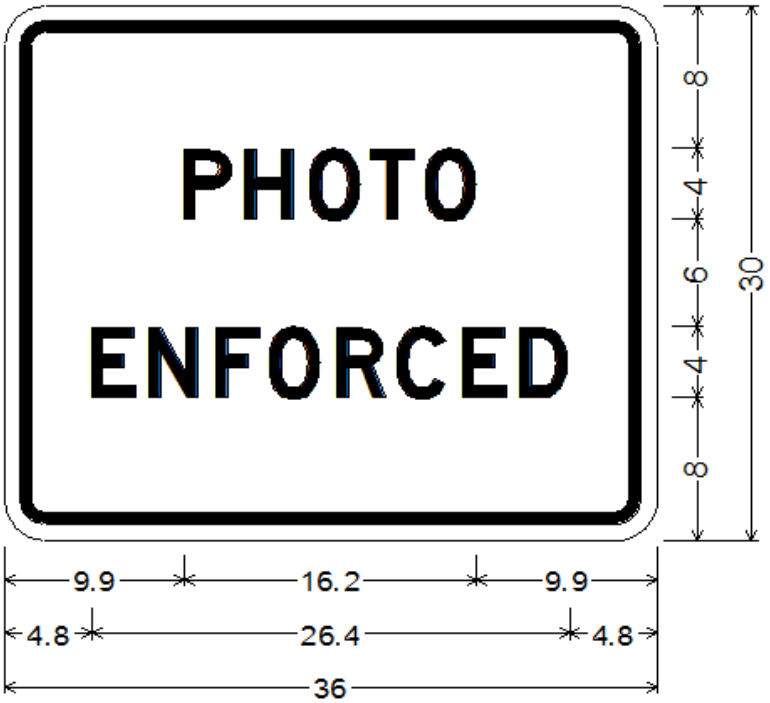
RECOMMENDED FOR LESS THAN 40 MPH;
FTP - MINIMUM , TRAFFIC PHOTO ENFORCED;
1.5" Radius, 0.5" Border, 0.5" Indent, Black on White;
"PHOTO" C 2K;
"ENFORCED" C 2K specified length;
AUX PANEL, FTP MIN ;
1.5" Radius, 0.5" Border, 0.5" Indent, Black on White;
"INCLUDES" D 2K;
"RIGHT TURN" D 2K 50% spacing;



RECOMMENDED FOR 40 MPH OR MORE;
R10-18a, (IA-12) MUTCD TRAFFIC PHOTO ENFORCED 12/10;
1.88" Radius, 0.75" Border, 0.50" Indent, Black on White;
"PHOTO" D 2K;
"ENFORCED" D 2K 80% spacing;
AUXILLIARY PANEL;
1.88" Radius, 0.75" Border, 0.50" Indent, Black on White;
"INCLUDES" D 2K;
"RIGHT TURN" D 2K;

** The supplemental panel with the legend “INCLUDES RIGHT TURN” shall be included on all Traffic Infraction Detector approaches where the right turn lane is controlled by the traffic signal.

ATTACHMENT B



2.3" Radius, 0.6" Border, 0.9" Indent, Black on White;
"PHOTO" D 2K; "ENFORCED" D 2K;
Table of letter and object lefts.

P	H	O	T	O
9.9	13.3	16.9	20.2	23.2

E	N	F	O	R	C	E	D
4.8	8.0	11.7	14.7	18.4	21.7	25.3	28.5