**Florida Traffic Infraction Detector Equipment and Testing Compliance Matrix**

(Derived from December 16, 2010 Equipment and Testing Specifications)

Date: 8/29/16

Manufacturer: ***Sensys America, Inc***

Authorized Official Name (print): ***Carlos Lofstedt, President and CEO***

Item, Model No.: ***D-Armor***

Signature:

| ID No. | Section | Requirement | Item comply? (Yes/No) | Comments |
|---|---|---|---|---|
| 1 | 1.3.1 | TID defines 'Compliant Vehicle' as a motor vehicle that stops behind the stop bar or clearly marked stop line when facing a traffic control signal steady red indication or traveling over the stop bar or clearly marked stop line when facing traffic control signal steady green or steady yellow indications. | ***Yes*** | The system tracks the speed and position of each vehicle in the enforcement zone. Any vehicle that comes to a complete stop before the stop bar when facing a red signal or crosses the stop bar when facing a steady green or yellow indication is ignored by the system. |
| 2 | 1.3.2 | TID defines 'Event' as when a motor vehicle fails to stop behind the stop bar or clearly marked stop line when facing a traffic control signal steady red indication. | ***Yes*** | The system captures Events only when a vehicle crosses the stop bar facing a steady red control signal. |
| 3 | 1.3.4 | Section 316.003(87), Florida Statutes defines a TID as a vehicle sensor installed to work in conjunction with a traffic control signal and a camera or cameras synchronized to automatically record two or more sequenced photographic or electronic images or streaming video of only the rear of a motor vehicle at the time the vehicle fails to stop behind the stop bar or clearly marked stop line when facing a traffic control signal steady red light. | ***Yes*** | The system senses the signal change using a direct, passive conneciton or through a wireless optical sensor and precisely times sequenced photographs and video to capture high resolution digital images of vehicle crossing the stop bar against a steady red signal. |
| 4 | 2.1 | TID captures an Event with a single vehicle in a single through lane. | ***Yes*** | The system captures nearly every violation across all lanes of traffic and specifically identifies and photographs the violating vehicle. |
| 5 | 2.2 | TID captures an Event with a single vehicle in a single through lane with the presence of multiple compliant vehicles in the same lane. | ***Yes*** | The system tracks multiple vehicles across several lanes of traffic and easily distinguishes between compliant and non-compliant vehilces. |
| 6 | 2.3 | TID captures an Event with a single vehicle in a single through lane with the presence of multiple compliant vehicles in the same and adjacent through lanes. | ***Yes*** | The system tracks multiple vehicles across several lanes of traffic and easily distinguishes between compliant and non-compliant vehicles. |
| 7 | 2.4 | TID captures multiple Events with multiple vehicles in a single through lane. | ***Yes*** | The system tracks multiple vehicles across several lanes of traffic and easily distinguishes between compliant and non-compliant vehicles. |
| 8 | 2.5 | TID captures multiple Events with multiple vehicles in the same and adjacent through lanes. | ***Yes*** | The system tracks multiple vehicles across several lanes of traffic and easily distinguishes between compliant and non-compliant vehicles. |
| 9 | 2.6 | TID meets the requirements of Sections 2.1 – 2.5 for left turn lane Events. | ***Yes*** | The system tracks vehicles in all lanes regardless of turning indications. |
| 10 | 2.7 | TID is capable of identifying Events where the speed of a single vehicle or multiple vehicles making a right turn on red is more than a configurable threshold speed. Speed is in miles per hour. | ***Yes*** | The system measures the speed of approaching vehicles at plus or minus 1 MPH. The system is configurable to capture violations at any specified speed threshold. |
| 11 | 3.1 | TID captures and stores photographic or electronic image of the intersection that includes the rear of the vehicle and license tag at a time the vehicle is in advance of the stop bar or clearly marked stop line with the corresponding traffic control signal steady red light visible in the image. | ***Yes*** | The first enforcement image captured and stored by the system is a high resolution digital photograph of the subject vehilce with its front wheels clearly behind the stop bar with the red signal phase clearly in view. |
| 12 | | TID captures and stores photographic or electronic image of the intersection that includes the rear of the vehicle and license tag at a time the vehicle is beyond the stop bar or clearly marked stop line with the corresponding traffic control signal steady red light visible in the image. | ***Yes*** | The second enforcement image captured and stored by the system is a high resoution digital photograph of the subject vehicle with its front wheels clearly beyond the stop bar with the red signal phase clearly in view. |
| 13 | | If Right Turn on Red events are enforced, TID captures and stores a minimum of 5 seconds of streaming video of the intersection that includes the rear of the vehicle and license tag beginning at a time the vehicle is in advance of the stop bar or clearly marked stop line with the corresponding traffic control signal steady red light and ending at a time after the vehicle is beyond the stop bar or clearly marked stop line with the corresponding traffic control signal steady red light. | ***Yes*** | The system captures a minimum of 5 seconds of streaming video conforming to this Item 13 for every captured violation including right turn violations where applicable. |
| 14 | | At least one of the two photographic or electronic images of the license tag, including license tag state, number and specialty logo (if applicable), is clearly legible. The viewable images have a minimum pixel resolution of 640 by 480. | ***Yes*** | The system extracts a clearly legible digital image of the subject vehicle's license tag from one of the two enforcement photographs. Image resolution equals or exceeds 640x480. |
| 15 | | The video has a minimum pixel resolution of 320 by 200 with a minimum frame rate of 5 frames per second. | ***Yes*** | All system videos meet or exceed the requirements of this Item 15. |
| 16 | | TID includes protective measures to prevent modification or unauthorized manipulation of captured and stored photographic or electronic images and video. | ***Yes*** | The system uses advanced MD5 checksum image protection and all violation data is protected using AES technology. |
| 17 | | TID does not capture nor store any front photographic or electronic images or videos of vehicle occupants. | ***Yes*** | The system is not configured to capture the front of any violating vehicle or any passengers in such vehilce. |
| 18 | 3.2 | TID captures and stores the following Event information in English text and/or Arabic numerals: 1. Names of intersecting Street and Highways; 2. A unique identifier of the intersection; 3. Lane number; 4. Direction of travel; 5. Month, day and year of the Event; 6. Hour, minute, and second of the photographic or electronic images in the local time; and 7. The difference in time from the beginning of the traffic control signal steady red light to the associated photographic or electronic images in tenths of a second. | ***Yes*** | Each system is configured to capture and store in English text or Arabic numerals 1. Intersection name, 2.Unique intersection and approach identifier, 3. Lane number (determined by speed and position and visually confirmed), 4. Travel direction, 5. Month, day and year, 6 Exact time of each violation image, 7. violation time into red and amber time to the nearest tenth of a second. |
| 19 | | The time of the photographic or electronic images or video are synchronized to an external source such that it is always within plus or minus one minute of Coordinated Universal Time (UTC). | ***Yes*** | The system synchronizes the time using the Net Time Protocol |
| 20 | | The alpha-numeric data and corresponding photographic or electronic image(s) are automatically captured at the same time. The data is associated with the photographic or electronic image without human intervention. | ***Yes*** | All infraction data is captured automatically at roadside by the system. The data is immediately encrypted and transmitted securely to our processing center with no human intervention. |

Authorized Official's Initials: Date: 8/29/16

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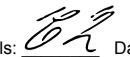
|---|---|---|---|---|
| 21 | 4.1 | The TID equipment does not interfere with any traffic control signal or other FDOT or Traffic Signal Maintaining Agency equipment. TID equipment that requires regulation by the Federal Communications Commission (FCC) meets the requirements in the 2005 Code of Federal Regulation (CFR), Title 47, Part 15, and is FCC certified. The FCC identification number is externally displayed on the TID equipment. | ***Yes*** | The system system connects to traffic control signals, if at all, passively and has no impact whatsoever on traffic signal timing or operation. Each system meets FCC requirements. |
| 22 | 4.2 | If visible illumination is used, the power of an illuminator (flash) device does not exceed 350 watts/second. | ***Yes*** | The system variable wattage flash is typically set at 250W/second and does not exceed the threshold set forth in Item 22. |
| 23 | 4.2 | The illuminator device has the capability of being filtered and/or positioned to limit effects on the drivers' field of vision. | ***Yes*** | The system flash is filtered to minimize the impact on drivers. We also offer a near infrared flash which is nearly invisible to the human eye. A flash less solution is also available. |
| 24 | 4.3 | TID cabinets and camera housings have protective measures against vandalism. | ***Yes*** | The system is fully enclosed in a tamper proof enclosure. The enclosures have a double lock. An optional alarm system can also be provided that can send an alarm based on open door, vibration or tilting. |
| 25 | 5.0 | If the Traffic Signal Maintaining Agency allows access to the traffic control signal cabinet, the TID does not impact operations or maintenance of the traffic control signals, pedestrian signals, or any other traffic control devices. | ***Yes*** | The system does not in any way interfere with any impact, modify, interefere with or otherwise hamper the operation, timing, maintenance, MTBF or any other aspect of traffic control signals, pedestiran signals or any other traffic control device. |
| 26 | 5.1 | Any attachment to traffic control signal cabinet wiring is electrically isolated from the traffic control signal cabinet. Electrical sensing devices are "donut" current transformers or Hall-effect devices. No other physical or electrical connections to traffic signal control circuits are allowed, including load switch driver control circuits, load switch signal circuits and detection circuits. | ***Yes*** | The system connection to any traffic control signal cabinet is passive, isolated torroid ("donut") magnet. No other connection is required or used. We also provide a wireless connection. |
| 27 | 5.2 | All TID equipment is electrically isolated from traffic signal equipment. If the Traffic Signal Maintaining Agency allows access to the traffic control signal cabinet, a surge protective device(s) is installed on any conductive bonds between the traffic control signal cabinet equipment and the TID equipment to protect the traffic signal equipment. | ***Yes*** | The system's surge protectio protects all devices. |
| 28 | | If electric power is obtained from an FDOT or Traffic Signal Maintaining Agency power service, a surge protective device(s) is installed between the TID equipment or circuit breaker and the power service. All surge protective devices and grounding systems installed meet the current FDOT Standard Specifications for Road and Bridge Construction. | ***Yes*** | If any power is obtained from FDOT or Traffic Signla Maintaining Agency power service, a surge protectiv device meeting FDOT Standard Specifications for Road and Bridge Construction will be installed between the system or circuit breaker and the power service. |
| 29 | 6.0 | Testing is conducted in accordance with the manufacturer's recommendations or in accordance with the County or City testing requirements, whichever is more stringent. Testing is conducted at regular intervals in accordance with the manufacturer's recommendations or in accordance with the County or City testing requirements, whichever is more frequent. | ***Yes*** | Each system self monitors every component and issues an automatic alert in the event that any component is operating outside of manufacturer's specifications. In addition, we do a regular physical inspection in accordance with manufacturer's recommendations (or more frequently if required by County or City testing requirements.) |
| 30 | | Testing includes, at minimum, System Test Function and Self Test Function. | ***Yes*** | The system performs continuous self-diagnostics and confirms radar calibration after every violation event detected. |
| 31 | 6.1 | The TID activates and creates Event information consistent with an Event, when artificially activated by a system test function. | ***Yes*** | The system performs a complete self-test when requested. |
| 32 | 6.2 | The TID performs and records the results of a daily internal self test sequence that confirms proper operation of each critical system component. | ***Yes*** | Each system self monitors every compnent and issues an automatic alert in the event that any component is operating outside of manufacturer's specifications. In addition, we do a regular physical inspection in accordance with manufacturer's recommendations (or more frequently if required by County or City testing requirements.) |
| 33 | 6.2 | If the system fails on one or more portions of the internal self test, the system renders itself inoperable until a successful internal self test is recorded. | ***Yes*** | If any self-test identifies a malfunction or other condtion that would in any way render its operation unreliable, the system will cease capturing events until it is repaired. |
| 34 | 7.0 | The TID manufacturer provides: • Installation and/or users manual(s) required to install and calibrate all TID equipment; • Operations, maintenance and/or service manual(s) required to operate and maintain all TID equipment; • Testing results in accordance with Section 6.0 (ID numbers 30 throught 33) of the Traffic Infraction Detector Equipment and Testing Specifictaions. | ***Yes*** | Each of the items specified in Item 34 is provided and maintained by the system manufacture |

Authorized Official's Initials:  Date: 8/29/16