

Report #: SML 0315-27
Date of Activity: 12 March 2015
Client: K40 Electronics Corporate
Tested Product: K40 RLS2



K40 RLS2



K40 Electronics Corporate contacted SML via the Internet wanting a field evaluation of their dash model (RLS2) under strict police observations and procedures, and a unit was shipped to SML via UPS. The testing was scheduled for February of 2015, but inclement weather kept SML from conducting such testing. The schedule was extended to March of 2015, and the field test was scheduled for the second week of March 2015. K40 complied with SML requests, as SML was teaching at a police department nearby. SML is independent and does not work for any of the manufacturers of radar and laser speed assessment systems. We teach at law



enforcement agencies around the country and worldwide. We teach the officers what the courts say about the use of radar and laser guns. Not our opinion... the facts laid down by the courts.

What I really wanted to find out was the RLS2's performance. For this test, we went to our test facility in El Paso, TX, to see how the RLS2 performed. We were fortunate!



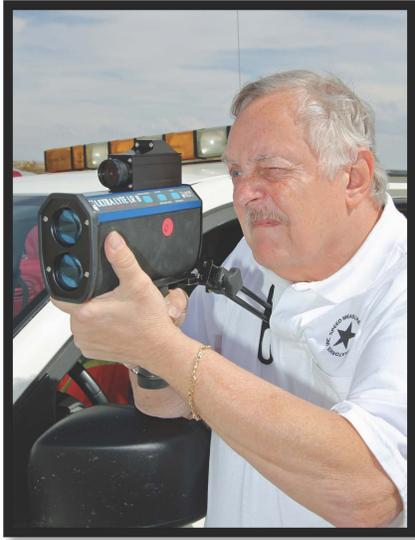
Our Tests - We had three SML members at our test facility: one a degreed engineer, one a retired ICE officer, and myself. Along with a police presence, we tested the K40 RLS2 to police use, not a theoretical whim. We set cones at 2 miles, 1 mile, 1,000 feet, and 500 feet. We wanted to see how the K40 reacted to present radar guns on X-band at 10.525 GHz, K-band at 24.150 GHz, and Ka-band at 33.4-36 GHz. A good detector will increase signal strength the closer it gets to the 500 foot cone. It *should* do that. However, some I have tested were wide open alerting a maximum signal strength at 2 miles. Let's be honest; you can't get a speeding ticket from 2 miles. You can't even see a vehicle at 2 miles.

The K40 RLS2 has a maximum signal strength of 9 out of 9 ("ss" means signal strength out of a possible nine). We need to have an ascending signal strength as we approach the radar gun, which is known as the Geiger Effect.



Band	2 Mile Cone	1 Mile Cone	1,000 Foot Cone	500 Foot Cone
34.7 GHz (Ka-Band)	6 ss	8 ss	9 ss	9 ss
35.5 GHz (Ka-Band)	6 ss	5 ss	7 ss	9 ss
33.8 GHz (Ka-Band)	3 ss	6 ss	9 ss	9 ss
24.150 GHz (K-Band)	3 ss	7 ss	9 ss	9 ss
10.525 GHz (X-Band)	4 ss	6 ss	9 ss	9 ss

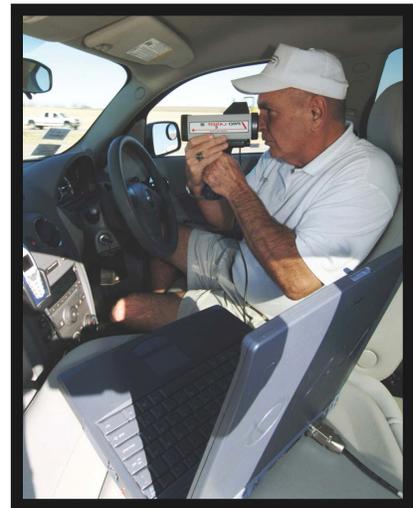
Police are taught to obtain a speed reading at approximately 1,000 feet, as it is part of their legal **valid visual tracking history** increasingly asked for by the courts. The police don't begin to track you from 2 miles or 1 mile. They can't even see you at that distance! Park a Dodge, Ford, and Chevrolet white pickup at 1,000 feet and tell me the difference. You can't!



Laser Alerts - We wanted to see how the RLS2 performed whenever receiving and reporting to laser alerts. We set the test vehicle at a cone placed at 1,000 feet and aimed multiple laser guns at the front license plate. We then moved the test vehicle to a cone placed at 500 feet to see if the RLS2 would alert to laser use. We utilized multiple laser guns, and we used two aiming points, especially at the 1,000 foot cone. We first aimed at the front plate, and then transferred to the front windshield. We did this to show that a 3 milliradian laser is a mere 36 inches at 1,000 feet compared to a 12 degree radar gun whose beam diverges to 212 feet at 1,000 feet (most radar guns in the specification section tell you the beam divergence of the radar gun. K and Ka-band guns have a 12 degree beam divergence, the Ka Bee III has a 13 degree beam divergence). Laser guns, with such a meager beam width of 36 inches, can target one vehicle in a group during

rush hour in metropolitan traffic. It is the fastest growing market segment compared to radar. We aimed at the windshield as part of our field testing to ensure the laser section of the detector was working properly.

There are specific court decisions regarding the maximum range of police laser gun use. These court decisions limit their use to a maximum of 1,000 feet, which is written on the ticket in most jurisdictions. This limit is part of the **valid visual tracking history**, and laser gun speed readings may not be used alone as *probable cause* in making a traffic stop. A total of five present CPL (Conforming Product List) laser guns were used during the testing. We cannot identify the laser guns due to confidentiality agreements with the manufacturers. You can access the CPL on the Internet at www.theiacp.org.



Laser Gun	Aimed from 1,000 feet		Aimed from 500 feet		Aimed from 10 feet
	Plate	Windshield	Plate	Windshield	Windshield
DE	N	Y	N	Y	Y
XLR	N	N	N	N	Y
4	N	Y	N	Y	Y
LRB	N	Y	N	Y	Y
20/20 S	N	Y	N	Y	Y

Multiple tries of each laser gun resulted in the report. When a laser gun was properly aimed at the front plate or headlight, the RLS2 did not report to an alert at 1,000 feet, nor at 500 feet. When the laser was aimed at the windshield, the RLS2 reported laser usage 8 out of 10 times. Other detectors have had the same results in the testing: not reporting laser aimed at the front plate. SML stands for Speed Measurement Laboratories, Inc., and the field approval seal to the right is not given easily. It is earned through the performance of tested products based on police procedures. It entitles the bearer of the product tested to use the test results per their needs.



The test results are useful in making a decision of which radar detector to purchase. The RLS2 gives you plenty of response time at two miles, which is ten times the capture distance of a radar gun. If the test course had been longer, it would still respond to the transmissions of radar guns. It is the best use of GPS we have ever tested to eliminate annoying false alerts. None of the present radar detector offerings on the market provide any protection to the use of laser from 1,000 feet. Testing was not done on the POP mode, as POP mode can't be used to issue a speeding ticket.

Testing was performed with RDD (radar detector detectors), and the RLS2 was not detected by present RDD systems.

Features:

The K40 use of GPS is unique, and it lets you have it your way! It knows your location and your speed. It is **not** a road map of direction. The K40 is not preloaded with red light or speed camera locations, so there is no need to update it. You control which locations you want to be warned about.



K-Band Filter & Quiet Ride - The number **one** objection to any radar detector is false alarms. False alarms are caused by automatic door openers, burglar alarms, other radar detectors, external intrusion alerts, terrestrial microwaves, train collision avoidance, car-mounted RSS (i.e. blind spot monitoring and collision avoidance using K-band transmissions - usually 100 feet

depending on the manufacturer), big truck braking systems, etc. K40 solved the problem with their K-Band Filter and Quiet Ride feature. The K-Band Filter rejects false alerts from car-mounted radar systems like blind spot monitoring and collision avoidance. We wanted to see if blind spot monitoring and collision avoidance bothered the RLS2, so we went to a local Dodge and Chevrolet dealer (whom I work with closely in traffic studies) to test the K-Band Filter. It worked and the radar signals did not bother the RLS2. The one thing you do not want is the detector going off when you use your blind spot monitoring or collision avoidance system, or if other systems approach you on the highway. It worked while other detectors did not. Remember, different makes of cars use different types of blind spot monitoring and collision avoidance systems in their specific vehicles.



For Quiet Ride, you set the speed and the GPS-enabled Quiet Ride activates. You enjoy a “quiet ride” without the annoyance of false alerts while the detector still displays the alerts without the verbal notification at speeds you select. Set the speed at 35 mph, or whichever speed you select, and the RLS2’s GPS takes over. Remember, you listen for radar/laser detection; you don’t watch your detector. The K40 dash detector still shows false alerts, but no typical verbal warning. Goodbye false alerts. See the picture above at a supermarket with the automatic door opener on K-band. The K40 on the left alerts you without audio while the detector on the right alerts with both visual and audio alerts. No more fumbling for the “mute” button.

Speed Monitor - This is a great family feature! If you have children, you must have this feature. Remember, the GPS knows the speed of your vehicle, along with the direction you are traveling. The Speed Monitor can be set at any speed you desire from 40-100 mph, or 60-160 kph. Exceed the preset limit, and the K40 RLS2 goes into action with an alert telling you to slow down. The visual alert showing your speed is another useful feature. It works time and time again, showing your speed to match your speedometer.



Mark to Alert - Another useful feature is Mark to Alert. Simply hit the MARK button on the top-left of the detector for school zones, work zones, or red light camera locations, and the K40 GPS remembers.

The detector tells you when you approach the marked location at approximately 750 feet by a not-so-subtle reminder of “Approaching Marked Location,” and then alerts at the location with a single “bing”



tone. It does not rely on preloaded locations, as some detectors do. It lets you mark locations as a reminder to you. Removing a marked location is just as easy, and the voice of the detector tells you, "Marked Location Removed."

Attested To This Day of 22 March 2015:



Carl Fors, President
Speed Measurement Laboratories, Inc.

