

# optima<sup>®</sup>



AUTHORIZED AGENT



**W** [www.kprojects-me.com](http://www.kprojects-me.com)

**P** +961 3737 759

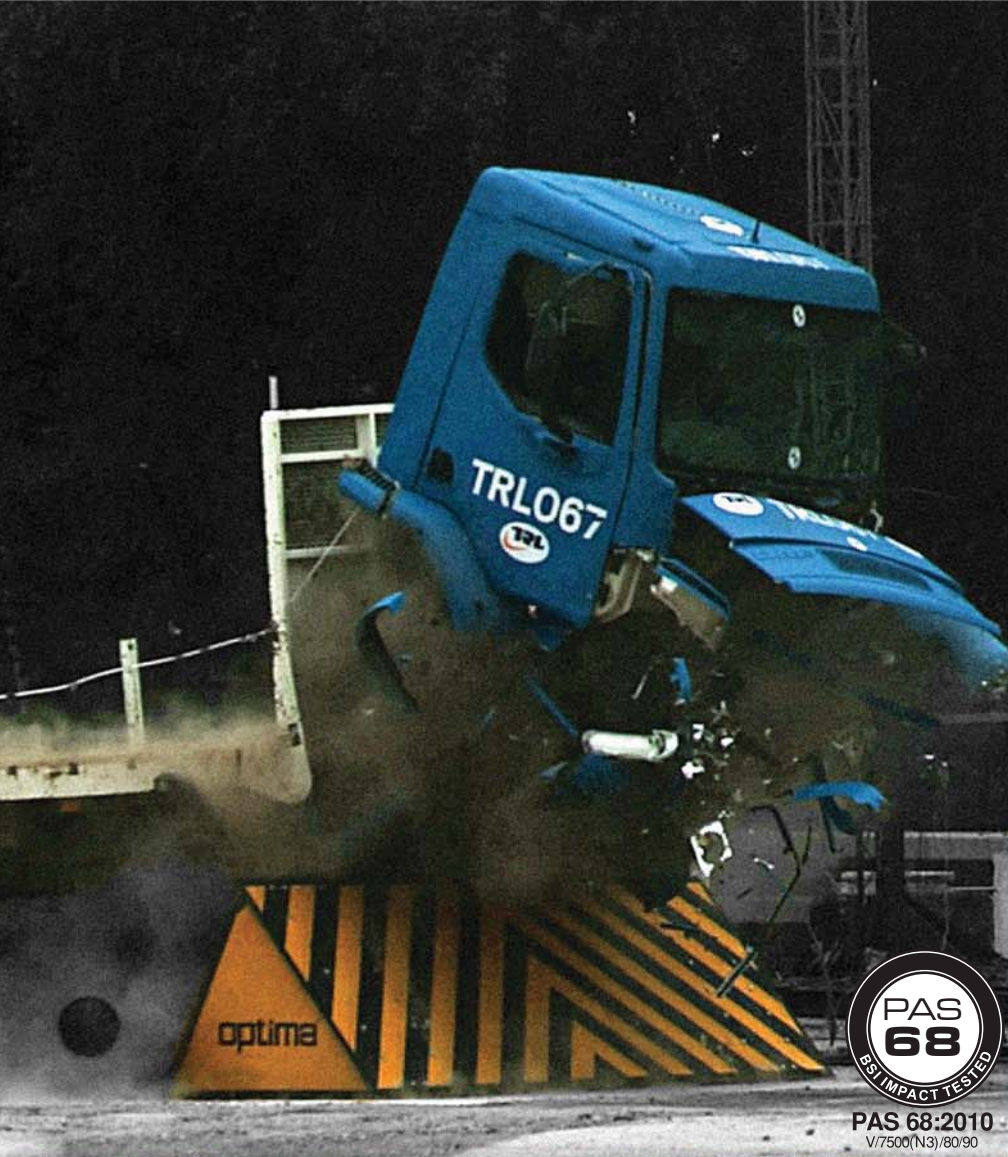


**CRASH TESTED**  
**HRR-HS4100- ROAD BLOCKER**

As is known, road blockers are one of the best solutions to minimize the destruction of the suicide truck bombings. The truck full of explosives is stopped right at the entrance of the site, therefore the explosion effect is kept far away from the human. At this point, the question is whether the road blocker will resist the impact and even still keep on working as there may be a follow-on another suicide bomb truck.

Optima Engineering realized this crash test on 26 June 2012 in a certified laboratory in England. The result is full success. A truck weighing 7500kg, N3 type, moving 80.1 km per hour speed, crashed with 90 degrees to Optima road blocker and the vehicle is fully destroyed. The blocker was still functioning after the impact, therefore, ready to stop the follow-on second suicide bomb truck.

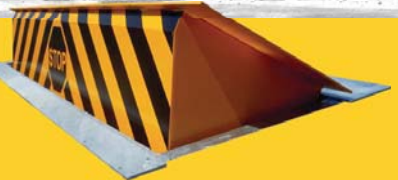
Consequently, with this crash test, Optima Engineering proved that the blockers manufactured in Optima Factory meet what they are designed and manufactured for, i.e., withstand the impact of a truck weighing 7500kg and moving 80.1 km/hr and keep on functioning even after the impact.



**PAS 68:2010**  
**CRASH TEST**  
**7500(N3)/80/90**



**ROAD BLOCKER**





PAS 68:2010  
V7500(N3)/80/90

PAS68:2010  
CRASH  
TEST  
7500(N3)/80/90

**ZERO PENETRATION**



## CRASH TESTED HRR-HS-CT SERIES ROAD BLOCKER

Road blockers are one of the best solutions to minimize the destruction of the suicide truck bombings. The truck full of explosives is stopped right at the entrance of the site, therefore the explosion harm is kept far away from the human. At this point, the question is whether the road blocker will resist the impact, if it does, what is the penetration in meters and does it still keep on working as there may be a follow-on another suicide bomb truck.

Optima Engineering realized this crash test on 20 December 2013 in a certified laboratory in England. The result is full success. A truck weighing 7600kg, N3 type, moving 80.8 km per hour speed, crashed with 90 degrees to Optima road blocker and the vehicle is fully destroyed. The blocker was still functioning after the impact, therefore, ready to stop the follow-on second suicide bomb truck. The penetration is 1.36-meters (minus one point thirtysix) which means the vehicle was stopped 1.36mt before the blocker.

Consequently, with this crash test, Optima Engineering proved that the blockers manufactured meet what they are designed for, i.e., stops (even 1.36mt before) a truck weighing 7600kg and moving 80.8 km/hr and keep on functioning even after the impact. Optima blockers successfully awarded PAS68:2010 P1 grade with the details V/7500N6.15/90:0.0/80/3

# CRASH TEST PAS68:2010



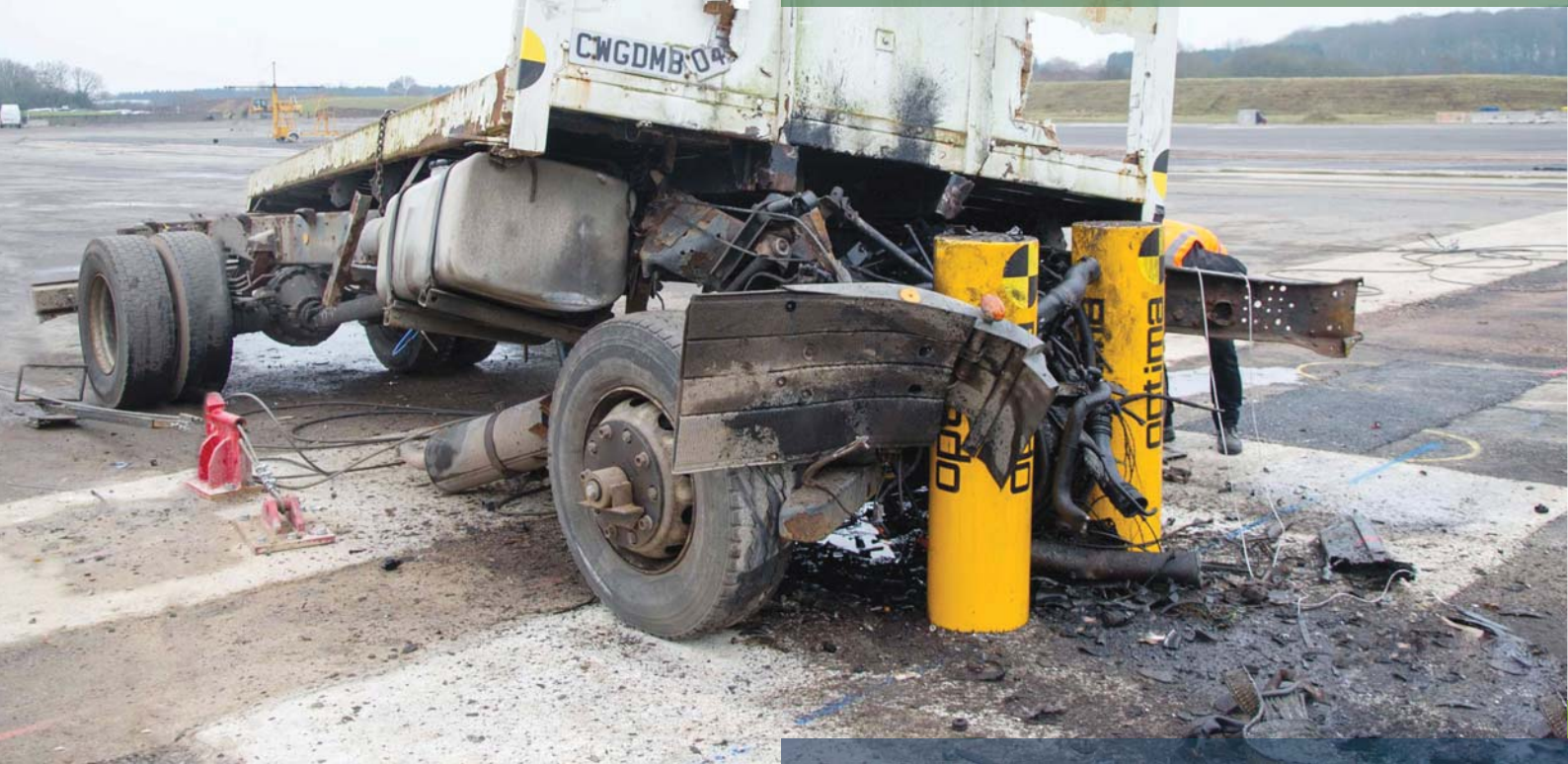
# ZERO PENETRATION



PAS 68:2013  
V17500(N3)/80/90:0.0

## PAS68:2013 CRASH TEST

7500(N90/80/3)



### FXB-CT CRASH TESTED FIXED BOLLARDS

OPTIMA crash tested fixed bollards are designed for high security army, industrial, governmental and commercial buildings, sites, complexes etc. If there is a threat of vehicle attack, crash tested fix bollards are one of the best and most secure solutions. Even though the attack is from high tonnage vehicles with high speeds, it is not possible for the vehicle to keep on moving forward anymore beyond the bollards.

Optima FXB-CT Crash Tested Fixed Bollards are designed for PAS68:2013 crash rating. Actual crash test is realized in 19 December 2016. Optima bollard is tested by a N3 type truck weighing 7500 kg and travelling at a speed of 80km/hr.

Optima crash tested bollard destroyed the vehicle and it was still functioning after the impact. Therefore Optima crash tested bollards successfully achieved and certified PAS 68:2013 V17500[N90/80/3] zero penetration (This means that M-50P1 "zero penetration" according to American standard).



## BOLLARD CRASH TEST PAS68:2013

ASTM F15-2656  
CRASH TESTED  
HRB-PROTECTOR SERIES  
RISING BOLLARD



ASTM F15-2656  
CRASH TEST  
7500(N90/80/3)

OPTIMA crash tested HRB-Protector series rising bollards are especially designed for entrances that have very high security requirements to keep vehicle access under control. In addition to the control of vehicle access in high security applications, if there is a threat of vehicle attack from high tonnage vehicles with high speeds, it is not possible for the vehicle to keep on moving forward anymore beyond the bollards as crash tested bollard destroy the vehicle completely.

OPTIMA crash tested HRB-Protector series rising bollards are designed for ASTM F15-2656 crash rating. Actual test was fully successful and the product is certified according to ASTM F15-2656 (grade P1, zero penetration).

# ZERO PENETRATION



## BOLLARD CRASH TEST ASTM F15-2656



PAS68:2010

CRASH

TEST

7500(N3)/80/90



PAS 68:2010  
V/7500(N3)/80/90



## CRASH TESTED FIXED BOLLARD FRB01-

Optima manufactures various types of bollards including hydraulic retractable and fixed ones. Optima fixed bollards are designed to protect the perimeters of any industrial, civil, army etc. building or site. Optima crash tested fixed bollards are tested to PAS68:2010 standards and achieved a full success at this test. The test is done by "one bollard only", not by two bollards placed 1.2mt away, consequently all the impact energy is applied on single bollard (not divided to 2 bollards).



The test which is actualized in England in 2013, is done by a truck which weighs 7500 kg, travelling at a speed of 82.6 km/hr speed. The vehicle is completely destroyed and immobilized. Naturally, the engine was not running after impact. The bollard was still functioning after the test, therefore a following vehicle could not be able to pass. After the test, there was 0 (zero) degree "foundation rotation". If Optima crash tested fixed bollards are placed side by side with 1.2 mt outer surface distance, a full protection of the site is definitely guaranteed. Beside being that strong, Optima bollards already have an aesthetical appearance with many color options.



# BOLLARD





**PAS 68:2010**  
V7500(N3)/80/90

## CRASH TESTED HRB-HS-CT SERIES RETRACTABLE BOLLARD

Optima manufactures various types of bollards including hydraulic retractable and fixed ones. Optima hydraulic retractable bollards are designed to protect the perimeters of any industrial, civil, army etc. building or site. Optima crash tested hydraulic retractable bollards are tested to PAS68:2010 standards and achieved a full success at this test. The test is done by two bollards placed 1.2mt away.

The test which is actualized in England in 18 December 2013, is done by a truck which weighs 7500 kg, travelling at a speed of 80 km/hr speed. The vehicle is completely destroyed and immobilized. Naturally, the engine was not running after impact. The bollard was still functioning after the test, therefore a following vehicle could not be able to pass. After the test, there was 0 (zero) degree "foundation rotation". Besides being that strong, Optima bollards already have an aesthetical appearance with many color options.

Consequently, Optima hydraulic retractable bollards successfully awarded PAS68:2010 classification with the details V/7500N22.8/90:3.5/80/3.

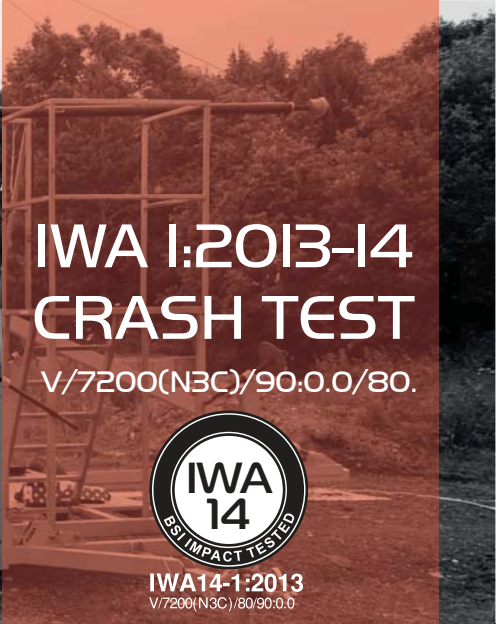


**PAS68:2010  
CRASH TEST**

7500(N90/80/3)



# CRASH TEST PAS68:2010



# ZERO PENETRATION

## IWA 1:2013-14 CRASH TESTED CANTILEVER SLIDING GATE

Optima SG-CT series crash tested automatic cantilever sliding gates are designed for high traffic military, commercial and industrial applications. This product is crash tested on 22 June 2016 and successfully achieved a performance classification of IWA1:2013-14 Gate V/7200(N3C)/90:0.0/80. Crash tested cantilever sliding gate height is 2.5m and the gate has 4.5m opening width. OPTIMA designs and manufactures gates up to 3m heights. There is not a standard length for cantilever gates but gates up to 12m have already been designed and manufactured. As the gate is cantilever, there is not a track on the road surface which slows down the traffic flow. Similarly there are no wheels under the cantilever door. All the gate is covered by galvanised sheet metal. There are adjustable mechanisms which keep the door vertical and in line. Also these adjustable mechanisms reduce noise and vibration during operation. This sophisticated design enables the complete system move smoothly and exactly vertical. Buttresses are fixed to the ground by steel anchors. Both crash tested cantilever sliding gates and the buttresses are sand blasted, primer coated and then painted to yellow with black stripes. There is a "STOP" sign in the middle of the gate.

When used with OPTIMA ESGO 4000, sliding gates with a weight up to 5000kg can be operated. With the help of the advanced electronics any type of speed control like slow start, fast linear motion and slow stop, can be achieved. This facility brings increased vehicle passing capacity without losing any degree of security.



# SLIDING GATE CRASH TEST IWA1:2013-14





# PAS68:2013 CRASH TEST 7500(N90/80/3)



## ZERO PENETRATION

### CRASH TESTED HDAB-CT SERIES DROP ARM BARRIERS



Drop Arm Barriers are one of the most secure solution to minimize the destruction of the suicide vehicle bombings. The vehicle full of explosives is stopped right at the entrance of the site, therefore the explosion harm is kept far away from the premises/human. At this point, the question is whether the drop arm barrier will resist the impact, and if it does, what is the penetration of the suicide vehicle to the site and does the drop arm barrier still keep on working as there may be a follow-on another suicide bomb truck.



Optima Engineering implemented this crash test on 23 April 2016 in a certified laboratory in United Kingdom. The result is full success. A truck weighing 7500kg, N3 type, moving 80 km per hour speed, crashed with 90 degrees to Optima drop arm barrier and the vehicle is fully destroyed. The beam is still at its place, supports and the hydraulics were still functioning after the impact, therefore, ready to stop the follow-on second suicide bomb truck. The penetration is 1- meters (minus one) which means the vehicle was stopped 1mt before the drop arm barrier.



Consequently, with this crash test, OPTIMA drop arm barriers is classified as PAS 68:2013 Rising Gate V/7500[N2.1/90:0.0/80/3] and it is proven that it stops (even 1mt before) a truck weighing 7500kg and moving 80 km/hr and keep on functioning even after the impact.



# DROP ARM BARRIERS CRASH TEST PAS68:2013

PAS68:2013  
CRASH TEST  
7500(N90/80/(3

ZERO  
PENETRATION



CRASH TESTED

## AVF SERIES ANTI-VEHICLE FENCE

Roadblockers and bollards are all designed for gates or entrances of buildings/campuses or sites. However, this is a case where the entire perimeter except the gates, is assumed to be safe enough. Suicide bombing vehicle attacks may also come from any possible place from the perimeter except the gates. As long as the suicide bombing truck is able to find any kind of runway to speed up, inner part of the site is under threat. The only solution to overcome this threat is having an OPTIMA PAS68:2013 Anti-Vehicle Crash Tested Fencing System.

The main components of the fencing system are static bollards and tensioned steel ropes running on top of all the bollards. Diameter of the bollards is 325mm and the height above the ground is 1200mm. On the outer side of the bollards (threat side) near the top, there is a flat metal part. This part is designed to gain the maximum amount of inertia to resist the impact load on the fencing. The material of both the bollards and the flat metal are high strength special type steel. Bollards are also buried under the ground level and they are connected to each other using sophisticated engineering methods which guarantees 100% safety. There are 4 lines of high strength steel ropes on outer top side of the bollards for extra safety.

Civil works for the OPTIMA AVF SERIES ANTI-VEHICLE FENCING SYSTEM is very easy and economic. There is no need for special drilling equipments or time consuming form and rebar placing.

Optima Engineering realized the crash test of Optima Anti-Vehicle Fencing System to BSI PAS68:2013 on 21 December 2015, in U.K. The test is a full success. The truck moving 80km/hr. with a weight of 7500kg/hr. is fully destroyed. No follow-on second truck can pass either. Therefore, with this crash test, Optima Anti-Vehicle Fencing System is awarded PAS68:2013 crash rating and classified as PAS 68:2013 Fence V/7500[N15.6/90:0.0/80/3



FENCE  
CRASH TEST PAS68:2013















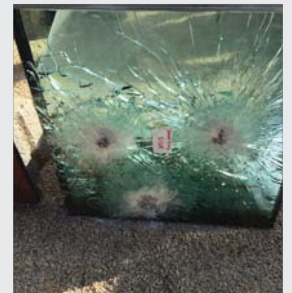
# AGH10-T SERIES ARMORED GUARD HOUSES

AGH Series Optima Armored Guard Houses are designed especially for places which have a high threat of terrorist attack, suicide vehicle attack or for the ones that have high security requirements. Optima armored guard house is secure to attacks with machine gun bullet; full metal jacket, pointed bullet, hard core, armor piercer (BV class). The above class bullets are not able to harm the guards in the Optima Armor Guard House, at all.



## AGH10-T SERIES ARMORED GUARD HOUSES SPECIFICATIONS

- Both for room and tower, all glasses, sides, floor and top are armored to BV level. Armor grade BV is tested and certified by internationally recognized third party laboratories.
- Room Dimensions (without Tower): 237cm height, 170cm width, 180cm length (can be designed and changed upon request).
- Shooting tower rotation is 360°. Rotation is easily done manually by the help of foot-rod mounted on the roof of the room.
- Optional exterior colors.
- Volume of the Room (without Tower): Approximately 10m<sup>3</sup>.
- Tower Dimensions: 133,0cm height, 171cm width and 178,0cm length.
- Volume of the Tower: Approximately 1m<sup>3</sup>.
- Tower has a total of three viewing armored-glass windows on three sides (one each on left, front and right).
- One shooting opening on the front side of the tower.
- One spring-actuated foldable chair on tower.
- Tower cooler fan.
- Flashing light and audible alarm on room's top outside.
- Three outer lamps facing left, front and right sides. They can be directed from inside manually. They can be rotated 360° degrees left to right and +/- 80 degrees up and down.
- Base for wireless communication.
- Room is fully insulated for water, heat transfer and sound.
- Room has 11 armored-glass windows and 11 shooting openings under them. One armored-glass window is on the door. Rest ten windows are facing 0 directions (two by two); left, left-front, front, right-front, right. Two windows on each side is located one under the other, therefore giving the soldier to shoot either standing or crouched.
- One opening for passing documents in and out of the guard house.
- Protection for all openings from inside.



Actual bullet test for glass-B7 protection grade



Actual bullet test for armour steel-B7 protection grade





# UVIS100-

## UNDER VEHICLE INSPECTION SYSTEM

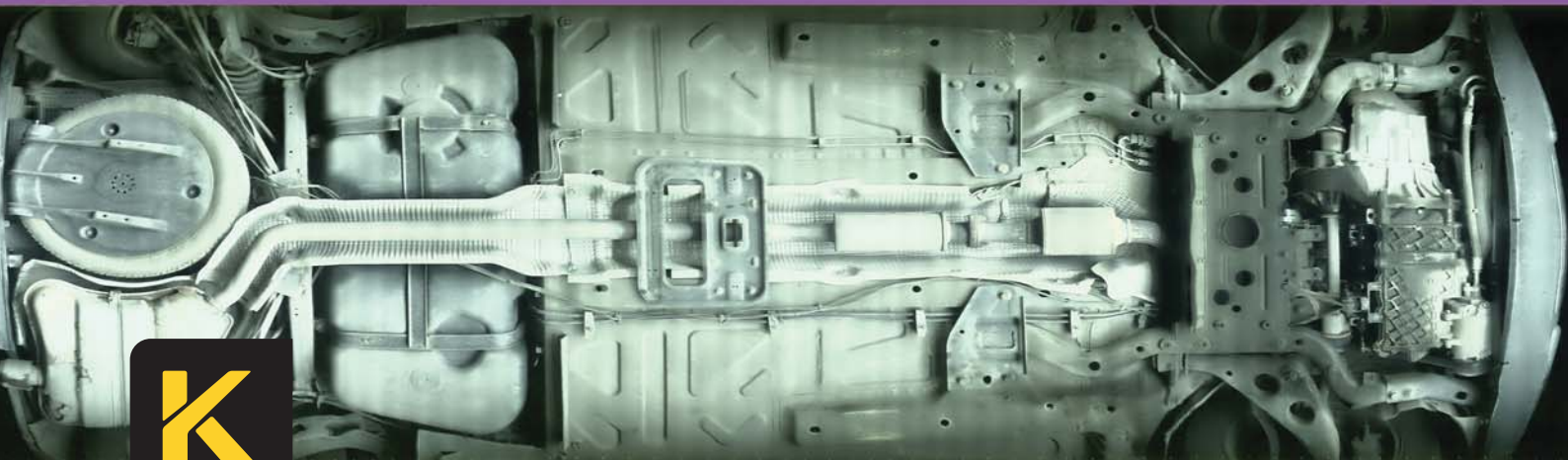
OPTIMA UVIS100 systems are designed with advanced security technology to scan, inspect and record underside of vehicles. Especially, these systems are used for entrances where there is a threat of suicide vehicle attack with bomb or for the entrances that have very high security requirements like army, industrial, governmental and commercial buildings, sites, complexes etc.

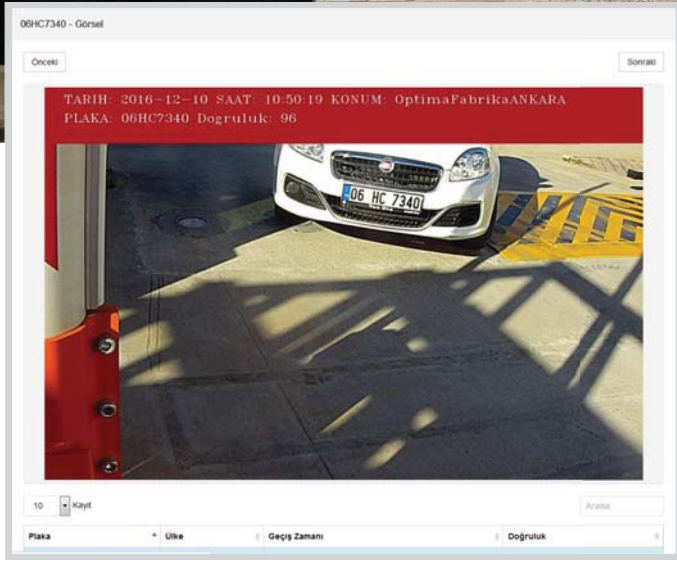
UVIS100 Under vehicle inspection system provides users needed safe area, thereby capturing and monitoring underside image of the vehicles with high-resolution auto digital line scanning camera.

As well as these, the system specifies suspicious objects after undervehicle scan process and takes them into a frame on the monitoring screen. The system is able to handle any vehicle moving at speeds between 0-100 km/hr and can perform bidirectional scanning from both sides.

Thanks to UVI system's advanced electronics; many type of security systems such as, road bollards, road blockers, barriers etc. or plate recognition systems can be integrated to the system very easily. Optima automatic number plate recognition systems (OPTIMA ALPR100) read and store vehicle number plates with that specific undercarriage image of UVIS system. Therefore, makes possible for the user to search and compare with other images.

User interface of the software is very friendly and useful for operators. Web interface allows to monitor recorded informations from anywhere in the world.





## ALPR100-

### AUTOMATIC LICENSE PLATE RECOGNITION SYSTEMS

OPTIMA ALPR100 is a next generation plate recognition system providing faster and more reliable solutions. The system recognizes international plate formats and styles. Customized modules are available for maximum performance for different types of license plates at several countries. It has suitable modules for highways, mobile operations, parking lots or facility entrances. The system offers a detailed, web-based database search and an alarm system for wanted, seized and stolen vehicles.

OPTIMA ALPR100 is one of the most user friendly, fast and sophisticated plate recognition systems available.

# Vehicle Recognition Systems

