

Moshon^{DATA}

Your partner for vehicle targets

Whether you need the official **EuroNCAP** vehicle target, Night testing, or a NCAP lighting solution...



... **MoshonData** is your one-stop-shop for all vehicle targets.





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About Moshon Data

Over 15 years experience in the automotive testing industry



Moshon Data are an innovative, fast growing technology business based out of Oxfordshire in the UK. We offer specialist active safety test equipment, expert training and consulting services to the automotive industry. Working alongside our global partner network, we pride ourselves on building strong relationships with all our customers and clients worldwide.

Following a recent move into a brand-new office and warehouse with an increased capacity, we can further test and improve all our products, develop exciting new concepts, ideas, and prototype vehicle test solutions.

Moshon Data's mission is to champion the benefits of active safety systems by spreading knowledge and understanding on a global scale. We passionately believe that if ADAS technology is universally applied to all vehicles, many lives can be saved.

In addition to expert training and consultancy services, Moshon Data supplies a range of vehicle targets ranging from the official Euro NCAP Vehicle Target (EVT), to our own, cost-effective vehicle target, foam targets and custom targets such as pedestrians, shopping trolleys and animals commonly involved in vehicle-wildlife collisions.

Moshon Data also supplies the Flex-Moshon towing system for towing the EVT during Autonomous Emergency Braking (AEB) tests and more. Having become specialists in VRU night testing with our signature tunnel, NCAP lighting and VRU targets, Moshon Data can answer all your testing needs.

Moshon Data are British Standards Institute (BSI) members and experts on the ISO committee for the development of Active Safety Test Equipment. All products are manufactured working with ISO/SAE/Euro NCAP standards and protocols.



*Our targets are your
target for a safer
world..!*



Euro NCAP vehicle target (EVT)

Manufactured to Euro NCAP specifications

High impact (80kph) version available



The Moshon Data EuroNCAP Vehicle Target (EVT) was developed to simulate the rear end of a standard production car and is suitable for RADAR, LiDAR and camera based systems.

The cover is printed with the EuroNCAP specific image of a VW car and incorporates reflective elements to aid LiDAR based technology. Moshon Data has made approved modifications to improve the assembly and use of the EVT. A radar absorbent foam section is sewn into the bottom to avoid it being lost or forgotten. The cover is quickly fastened at the rear using a stretch cord and toggle method and the same method is used to tension the front and rear faces to the balloon.

The EVT EuroNCAP Vehicle Target provided by Moshon Data conforms to the EuroNCAP specifications as defined in the official AEB test protocol.



AEB City



AEB Inter-Urban



FCW





Moshon Data vehicle target MD-VT & MD-VT L

Low-cost, inflatable version of the Euro NCAP Vehicle Target



The MD-VT and MD-VT L (Large) is an inflatable, lower cost version of the official Euro NCAP Vehicle Target (EVT). It is designed to the same specifications as the Euro NCAP target and intended for development work. Being a cheaper substitute for the EVT means vehicle manufacturers and test facilities can purchase multiple vehicle targets and increase the number of tests.

Both targets comes with regionalised number plates. Shown here are our American number plates but any number plate can be provided on request.

The MD-VT and MD-VT L are available in a range of colours.

-  AEB City
-  AEB Inter-Urban
-  FCW





Moshon Data Vehicle target MD-VT F (foam core)

Low-cost, foam version of the Euro NCAP Vehicle Target



The MD-VT F is a lower cost, foam version of the official Euro NCAP Vehicle Target (EVT). It is designed to the same specifications as the Euro NCAP target and intended for development work. Being a cheaper substitute for the EVT means vehicle manufacturers and test facilities can purchase multiple vehicle targets and increase the number of tests.

The MD-VT F comes with regionalised number plates. Shown here are our American number plates but any number plate can be provided on request.

-  AEB City
-  AEB Inter-Urban
-  FCW

Moshon Data Vehicle target MD-VT FI

ISO standard foam Vehicle Target



Ideal for end of line production use - does not require regular maintenance to keep inflated, conforms to ISO standard! Sensor specific recognition properties as shown in document ISO 19206-1:2018(E) Annex B (Page 10)



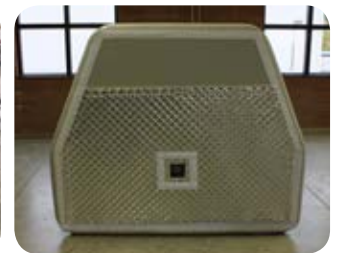


Moshon Data Slab Air-tight Target MD-S

Low-cost, portable demonstration target



This inflatable air-tight target is designed as a very low cost, portable demonstration target. Constructed to a very high standard, the MD-S has all the features of the more expensive models.



Customisable to your desired image from GTi shape to Touran shape, it can also be used as a quick test target as it is easy to set up and quick to use. This is a perfect target for a range of uses, marketing, dealership or even fleet training.

If you want a target to take to many locations, this inflatable target is the one you need as it can easily be transported inside a suitcase.

The MD-S is available in a wide range of vehicle images.





Moshon Data Slab Foam Target MD-SF

Low-cost, demonstration target



This target has been designed as a very low cost Demonstration Target, although it is constructed to a very high standard, the MD-SF has all the features of the more expensive models.

We can provide this shape in either the GTi shape, or Touran. Using the MD-SF is perfect for multiple uses, marketing purposes, dealerships and fleet training. When the target isn't in use, it can be stored flat against a wall.





Flex-Moshon Towing Systems

Towing system designed for vehicle targets

High speed (140kph) version available



The Flex-Moshon towing system is designed to tow a balloon car during Autonomous Emergency Brake (AEB), Forward collision warning (FCW) and other ADAS tests.

The Moshon Data towing system consists of 3 pressurised hoses (15 meter length) including Storz hose coupling, hose carriers with 2 wheels each, a support plate with tow hitch system, the balloon car carrier and 12V compressor. The pressurised hoses ensure that the vehicle target maintains its required position when towed behind the towing vehicle. The space between the target and the towing vehicle remains constant even during braking. After a collision the balloon vehicle target aligns itself automatically and is instantly ready for further testing.

Lane change manoeuvres can be performed with the balloon target up to approx. 60 kph. During a lane change the vehicle target follows the towing vehicle's lane with only a few centimetres deviation. The flexible set up not only enables lane changes but also allows turning on the track.

Set up takes less than one hour and can be performed by one person. The Flex-Moshon EVT Towing System can be fully dismantled and fits in the boot of an estate or large hatchback.





Flex-Moshon Towing Systems

Towing system adapted for winter testing in snow



Moshon Data has developed the first Flex-Moshon EVT towing system for winter testing in the snow. Specifically adapted for winter AEB testing, the Flex-Moshon uses expertly designed skids instead of wheels which allows the towing system to glide across snow and ice.

Filled with nitrogen gas instead of air prevents ice from building up inside of the pneumatic system which itself was modified to allow it to work in the harshest conditions.

If you already own a Flex-Moshon towing system, you can add the winter testing accessory pack.





MD-Flex-iM

Flex-inMoshon System



Accurate real-time polygon or bulls-eye representation

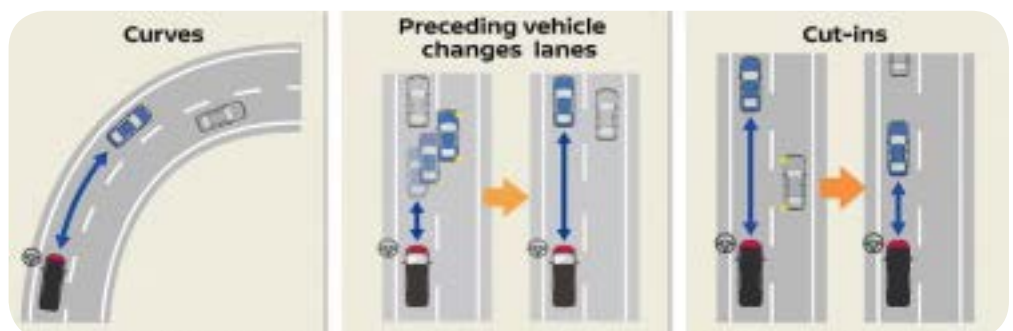
For the first time ever it is now possible to add an INS system to the Flex-Moshon.

This means absolute RTK position of the EVT is possible at all times during each test.

For those of you who test daily we don't need to tell you how powerful this is, especially since the 2018 protocols arrived. As well as lane change, curves and cut-in tests, you will be ready for all the many varied junction assist manoeuvres which are quite literally 'just around the corner'!

For regular AEB testing, more repeatable and reliable testing will also be possible for each test, not failing because of those annoying long lever arm lateral offset errors from the towing vehicle to EVT.

This is the perfect add-on kit for your Flex-Moshon.





Flex-Moshon 3D

Low cost alternative to a fully featured robotic GVT



While robots are the product for NCAP standards, a lot of work can be done affordably, simply and easily using a Flex-Moshon system.

- Uses a 3-pc 3D target (MD-3D-GTI) on a purpose-built Flex-Moshon towable platform
- 3D target Follows the path of the towing vehicle
- Low cost alternative to a GVT robotic platform
- Development work for the Euro NCAP 2018 C2C AEB test protocol
- Lateral overlap of GVT - 3D vehicle side visibility
- ADAS testing & development
- ACC & FCW development
- Lane change scenario's
- Cut in and curve manoeuvres
- Slalom manoeuvrability possible
- Existing Flex-Moshon systems upgradeable.





Moshon Data 3D Targets - Foam

Full vehicle targets with foam core

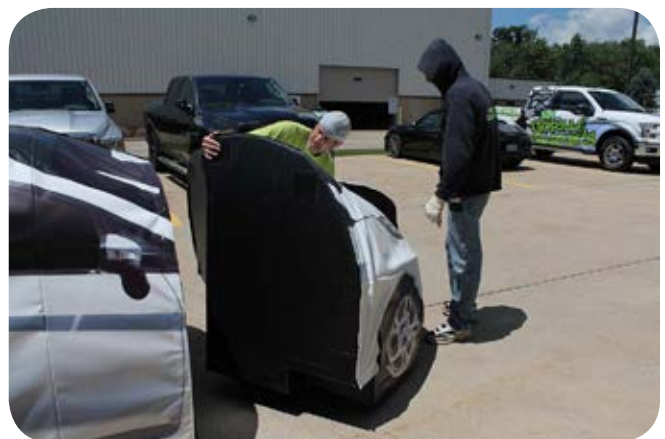
Our 3D Foam targets are designed to meet ISO 19206-3 standards and Euro NCAP AEB C2C protocols as an alternative 3D foam target for the development of the following applications and tests:

- 📶 AEB rear and offset / Lateral overlap
- 📶 Suitable for CCRs, CCRm and CCRb
- 📶 Head-on collision
- 📶 BLIS – Blind Spot Detection
- 📶 Reverse-AEB compatible
- 📶 Lane Keep Assist
- 📶 ACC
- 📶 FCW
- 📶 ...More

MD-3D-F (Fiesta)

The MD-3D-F is a 3D dimensional contoured foam target designed to represent a standard production Ford Fiesta visually and to the vehicle sensors (Radar, LiDAR, IR Reflectivity) Comes free standing or is customisable to mount onto a robotic platform.

- 📶 6 pieces
- 📶 Designed for all six pieces to scatter away upon impact
- 📶 Reassemble from impact in under a minute
- 📶 Up to 50 kmh impact speeds*
- 📶 LiDAR: ECE104 standard reflective material
- 📶 Radar: Energy Shield and Corner reflectors
- 📶 Durable, high quality build





MD-3D-GTI - (GTI & Jetta)

The MD-3D-GTI is a 3D dimensional contoured foam target designed to represent a standard production VW-GTI visually and to the vehicle sensors (Radar, LiDAR, IR Reflectivity). Comes free standing or is customisable to mount onto a robotic platform.

- 3 pieces
- Designed for low-friction slide when used in static mode
- Reverse-AEB – IIHS and NCAP procedure compatible
- Suitable for use on the 3D-Flex-Moshon
- Up to 50 kmh impact speeds*





Moshon Data 3D Targets - Inflatable

Full inflatable vehicle targets





Park Assist Solutions

The complete package for all parking assist testing needs

Our park assist solutions make it possible to perform Active Park Assist test scenarios for either technology development, customer demonstration or training activities. The bundle comprises of two soft vehicles and eight pavement sections put together to create a soft parking area. This can either be parallel or road-side parking. The Sensors in the vehicles will recognise the soft targets as the real thing and park safely between them. This means you can park safely, and without risk of damage to the subject vehicle or the drivers nerve's.



Please contact us with your testing requirements and we can put together a solution built for you.





MD-SC-R8

NCAP Junction 8m Radius (Using Moshon Data Soft City Pavements)



Moshon Data has designed and developed foam pavements / sidewalks in straight and curved sections to create configurable junction scenarios including Euro NCAP Car to Pedestrian Turning Adult.

The curve pavements are available as a bespoke radius or Euro NCAP R 8m as seen in the below figure from the Euro NCAP Test Protocol - AEB VRU Systems (6 TEST CONDITIONS, page 12).

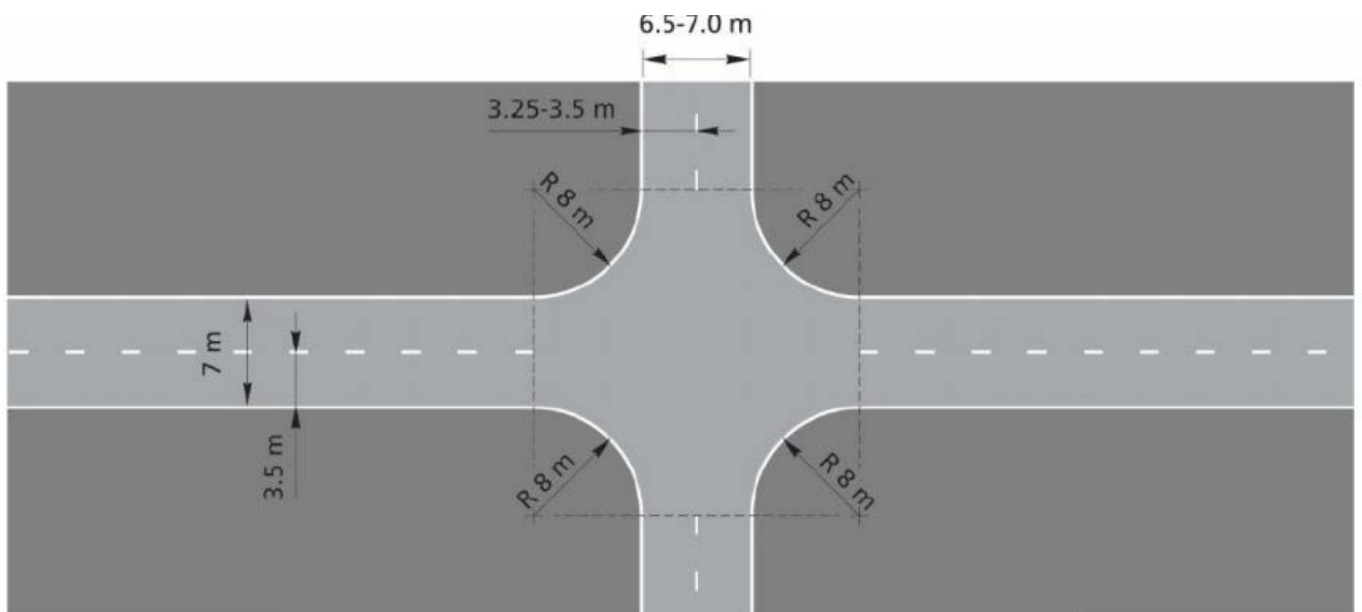


Figure 6-1: Layout of junction and the connecting lanes





Moshon Village

Pop up ADAS and Autonomous Testing Village



2D Plus option available





Soft Foam Pavements / Sidewalks

Adding a vertical element to a 2D scenario to create a Radar suitable defined road edge (2D Plus)



1m modular section and 100mm high

Customisable lengths

Radar Cross-Section (RCS) signature analysis (one section): average at 50 m range: 5.43 dBm2*

* Full RCS test report is available from Moshon Data by request



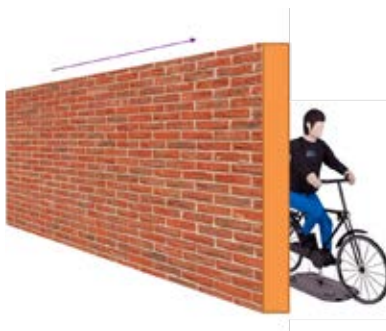
Foam Roundabout and Traffic Island





Obstruction Foam Wall

Foam 3D walls to replicate Brick, Building Fronts or Custom Designs



- 8.8 m long obstruction wall
- Free standing on weighted base
- Modular design – 4 x 2.2 m sections
Custom sizes available
- Suitable for use in the Euro NCAP AEB VRU test protocol
- Default brick wall image can be replaced with any image
I.e. Shop fronts, houses etc.
- Radar Cross-Section (RCS) signature analysis (one section): average at 50m range: 23.80 dBm²*
* Full RCS test report is available from Moshon Data by request

Moshon Garages

Perfect to test parking inside a garage





Roadside Furniture

Soft targets designed to create everyday road scenarios.





Moshon City Scapes

Obstruction walls, City Scapes and Junctions



Optional Pavement / Sidewalk

D rings to attach Images

Vertical Sections

5.5m x 3m x 3m

2.7m x 1.5m x 1.5m

Horizontal Sections

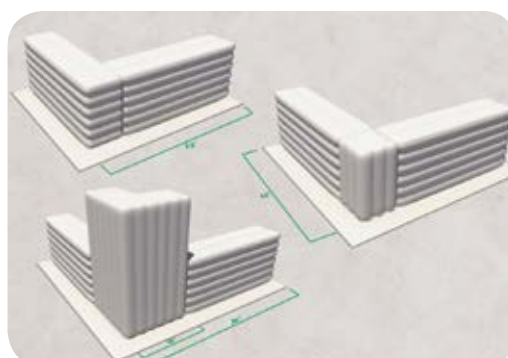
6m Long

1.5m Deep

2.75m High

Using an internal blower

Configurable



"Imparting Knowledge"



Reverse AEB

Pillar and Post

IIHS and RCAR procedure compatible



Post

- Material: Made from a tough, robust PVC tube with an internal water ballast
- Additional enhancements: Standard white ECE104 Lidar reactive material
- Dimensions: 13 cm x L 95 cm
Weight (without water ballast): 1.95 kg

Car park pillar

- Materials:
 - Foam core
 - Solid nylon base for stability
 - Grey PVC cover
 - Optional bespoke images and colours
- Dimensions: H 2 m x L 0.5 m x W 0.5 m
- Weight: 33.75 kg





Contrast Trailer



Parts Included

-  1 x Towing Frame
-  4 x Caster Wheels
-  2 x Inflation Fans
-  2 x Zipper Sides



Moshon Data Tunnel

For testing ADAS in complete darkness



This is a unique solution for testing ADAS sensors in the dark. Exclusively available from Moshon Data, the sectional Inflatable Tunnel can be configured in various options.

Suitable for NCAP VRU testing in the dark the 10m wide 7M high NEST, Night Environment Simulation Tunnel consists of 15m long sections, each section has emergency exit, HVAC and exhaust extraction ports.

With a background Lux of less than < 0.1 and average number of GNSS satellite readings of approx 13, the NEST is an ideal Controlled-Light environment. Capable of having Moshon Data's NCAP 5m high Street lights inside whilst still allowing the VRU pedestrian Robot to operate from behind parked obscuration vehicles into the path of the VUT (vehicle under test).

Smaller 5m wide 3m high sections are available to give an acceleration path into the Lit-up test area.

Custom options are possible with an Intersection being developed along with a Head light Test version.

Suitable for:

-  VRU Pedestrian testing in the Dark
-  Headlight test
-  Headlight sensor test
-  General Night test
-  Brake test area, controlled environment





Moshon Data Tunnel

For testing ADAS in complete darkness



This is a unique 300ft (91m) long tunnel for testing ADAS sensors in the dark. Exclusively available from Moshon Data, the night vision tunnel provides interior light blocking to assist with the development of night vision assist technology. The tunnel consists of six 50' long connecting sections, five emergency exits/exit lights every 50' and three 5000 CFM exhaust fans to clear the air after every run through. The tunnel is suitable for AEB and VRU tests.

The tunnel is high enough to fit street lights and other roadside furniture for realistic test scenarios in complete darkness. The tunnel is easy to set up and can be deflated to fit into custom carrier cases.



LED Brake Light Simulation

Brake light simulation for all soft targets



Changeable LED heads



Back light and Brake light



Simulates braking effect



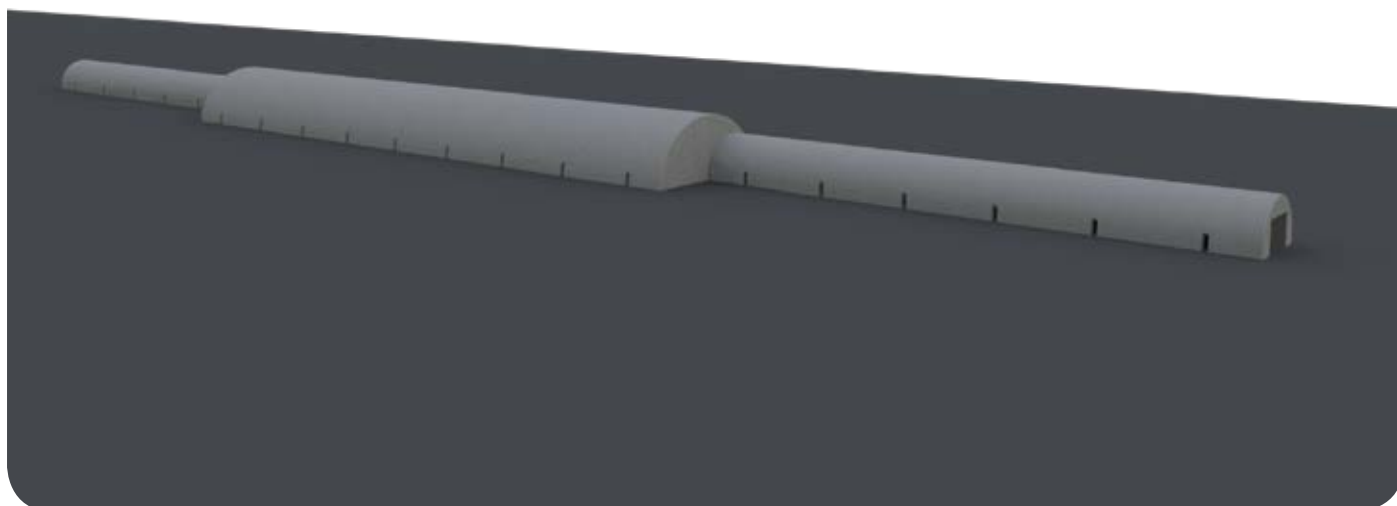
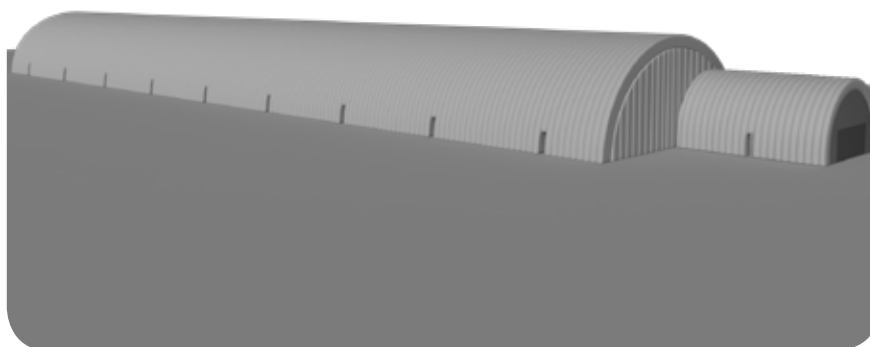
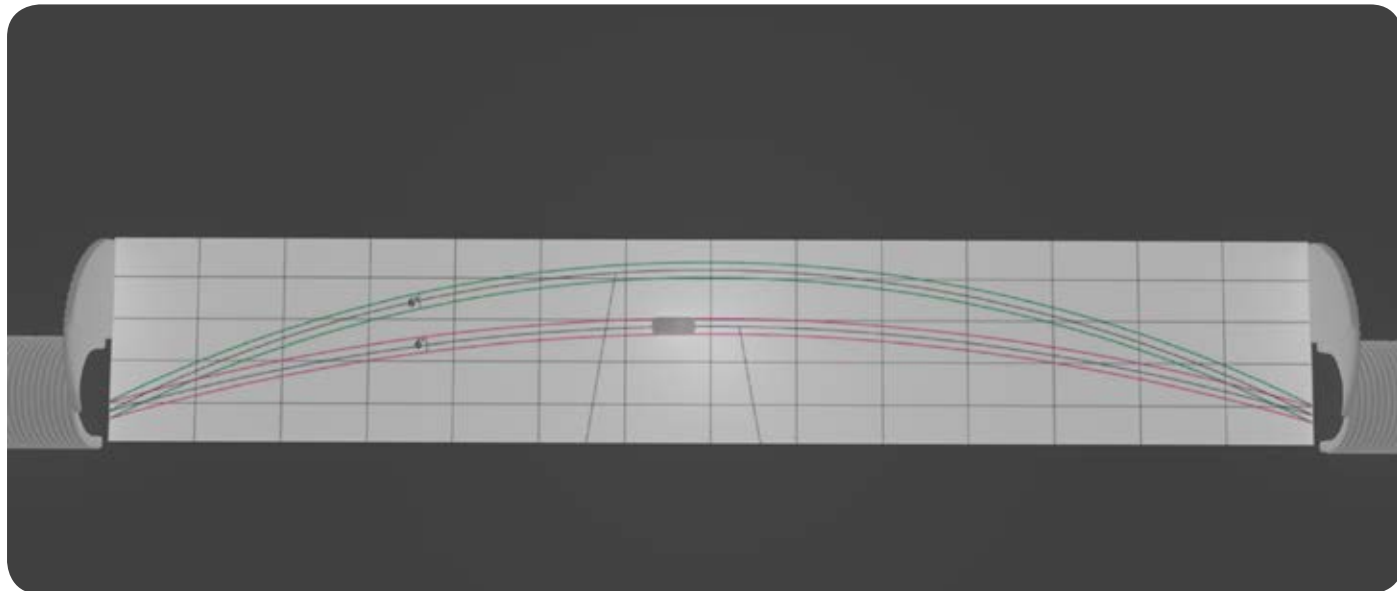
Fits any soft target



IIHS Headlight test - NEST

Document reference: Headlight Test and Rating Protocol (Version II)

- November 2016





5 Lamp Euro NCAP

Street Lighting and Mast packages for VRU testing in the dark



- Choice of lamp head:
Zeta
Schuch
- Designed for Euro NCAP AEB VRU spec:
VUT vehicle path 19 ± 3 lux
EPT path > 5 lux
- Precision mast alignment control to 0.1 deg
turn-able base option with degree counter
- Choice of either tripod or concrete base
- Option for Konica Minolta T-10A lightmeter
to be included
- Solutions includes all cabling





5 Lamp Euro NCAP

Street Lighting and Mast packages for VRU testing in the dark





Moshon Data - Custom Targets

Moshon Data offers a range of bespoke target solutions



Moshon Data offers a large range of vehicle targets for ADAS testing. We also supply custom targets such as pedestrians, motorcycles, shopping trolleys and animals commonly involved in vehicle-wildlife collisions such as deer or moose. These targets can be manufactured to your individual specifications.





Consulting / Training

Moshon Data offers ADAS test consulting and equipment training



Moshon Data can provide courses on advanced driver assistance systems (ADAS) testing which are client focused and tailored to your individual needs. Moshon Data also provides advanced training on equipment from leading ADAS test system providers such as Oxford Technical Solutions, Racelogic and AB Dynamics.

With over 14 years experience in automotive testing and working closely with the world's leading vehicle manufacturers and EuroNCAP partners. Moshon Data has become a leading expert in the field of ADAS testing.

Whether you need to carry out AEB testing according to EuroNCAP specifications or perform complex Lane Departure Warning tests - Partner with Moshon Data for successful test results and the right test equipment choices.





Marketing / Demonstration & Events Services



Moshon Data can support your event and help you market your ADAS or autonomous technology by taking a blank empty space, turning it into a Moshon Village to fully demonstrate ADAS functions.

We can demonstrate:

- | | | |
|--|---|---|
|  Adaptive Cruise Control |  Blind Spot Information System |  Park Assist Solutions |
|  AEB Moving (CCRM) |  Night Simulation |  ADAS Village |
|  Forward Collision Warning |  VRU Detection |  Road Sign Recognition |
|  AEB Static (CCRS) |  Reverse AEB |  Autonomous Driving |

Marketing:

We can add your logo / campaigns / event to most of our products.



Our Night Simulation Tunnel also has provisions for marketing banners at locations along its length.

All you need to do is speak to our team and we can provide you with the most suitable options for marketing your events which could include corporate branding!



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