

# ANCAP Safety Rating: VOLVO XC90 (September 2015 - January 2022)



Copyright © 2015 Euro NCAP  
Frontal offset test at 64km/h

## This ANCAP safety rating applies to:

|              |                               |
|--------------|-------------------------------|
| Make / Model | Volvo XC90                    |
| Year Range   | September 2015 - January 2022 |
| Variant(s)*  | Diesel variants               |
| Vehicle Type | Large SUV                     |

The tested model of Volvo XC90 was introduced in Australia and New Zealand in September 2015. This ANCAP safety rating applies to diesel variants.

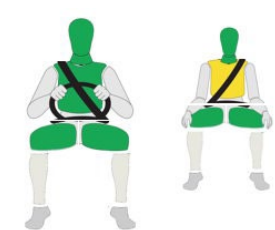
Dual frontal, side chest and side head airbags (inflatable curtain for all three rows) and a driver knee airbag are standard. Electronic Brake Distribution (EBD), Emergency Brake Assist (EBA), Autonomous Emergency Braking (AEB) and Lane Support Systems are also standard. Advanced seat belt reminders are fitted to all seats.

Euro NCAP awarded the European XC90 full marks for Intelligent Speed Assistance (ISA) but the Australasian model currently lacks the speed limit data and speed limiter functions of this system.

## Injury Outcomes.

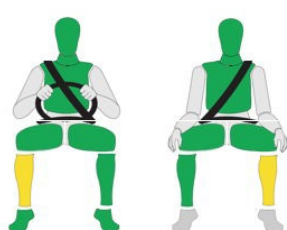
### Full Width Frontal

Driver Rear Passenger



### Frontal Offset

Driver Front Passenger



### Side Impact



### Pole



### Whiplash Protection

Rear Front



## Test Results Summary.

|                                  |                                |
|----------------------------------|--------------------------------|
| <b>Airbags</b>                   | Dual Frontal, Side, Head, Knee |
| <b>Adult Occupant Protection</b> | 97% (37.02 out of 38)          |
| - Full Width Frontal Test        | 7.76 (out of 8)                |
| - Frontal Offset Test            | 7.81 (out of 8)                |
| - Side Impact Test               | 8.00 (out of 8)                |
| - Pole Test                      | 7.60 (out of 8)                |
| - Whiplash Protection Test       | 2.85 (out of 3)                |
| - AEB (City)                     | 3.00 (out of 3)                |
| <b>Child Occupant Protection</b> | 87% (43.00 out of 49)          |
| <b>Safety Assist</b>             | 73% (9.55 out of 13)           |
| - Speed Assistance System        | 0.50 (out of 3)                |
| - ESC                            | 3.00 (out of 3)                |
| - Seat Belt Reminders            | 3.0 (out of 3)                 |
| - Lane Support System            | 0.5 (out of 1)                 |
| - AEB (Interurban)               | 3.0 (out of 3)                 |
| <b>Pedestrian Protection</b>     | 72% (25.93 out of 36)          |
| <b>ANCAP Safety Rating</b>       | ★★★★★                          |
| <b>Rating Year^</b>              | 2015                           |

## Adult Occupant Protection.

### Full Width Frontal Test

Each body region is scored out of 4 points (total is halved)

#### Driver

|             |             |
|-------------|-------------|
| Head:       | 4.00 points |
| Neck:       | 4.00 points |
| Chest:      | 4.00 points |
| Upper legs: | 4.00 points |

#### Rear Passenger

|             |             |
|-------------|-------------|
| Head:       | 4.00 points |
| Neck:       | 4.00 points |
| Chest:      | 3.03 points |
| Upper legs: | 4.00 points |

### Frontal Offset Test

Each body region is scored out of 4 points (total is halved)

#### Driver/Front passenger (lesser of each)

|              |             |
|--------------|-------------|
| Head / neck: | 4.00 points |
| Chest:       | 4.00 points |
| Upper legs:  | 4.00 points |
| Lower legs:  | 3.63 points |

The passenger compartment held its shape well in the offset test. Pedal and steering wheel displacements were well controlled. Driver and passenger contact with the airbags was stable. All doors remained closed during the crash.

### Side Impact Test

### Pole Test

Each body region is scored out of 4 points (total is halved)

|          |             |
|----------|-------------|
| Head:    | 4.00 points |
| Chest:   | 4.00 points |
| Abdomen: | 4.00 points |
| Pelvis:  | 4.00 points |

|          |             |
|----------|-------------|
| Head:    | 4.00 points |
| Chest:   | 3.20 points |
| Abdomen: | 4.00 points |
| Pelvis:  | 4.00 points |

There was a slight risk of serious chest injury in the pole test. Otherwise driver protection was good.

### Whiplash Protection

|               |             |
|---------------|-------------|
| Front / Rear: | 1.85 points |
| Rear:         | 1.00 points |
| AEB (City):   | 3.00 points |

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## Child Occupant Protection.

### Crash Test Performance

|                     |              |
|---------------------|--------------|
| 18 month old child: | 12.00 points |
| 3 year old child:   | 12.00 points |

### Child Safety Features

|                     |           |
|---------------------|-----------|
| Safety features:    | 7 points  |
| Installation check: | 12 points |

**NOTE:** The child restraints tested by Euro NCAP are relevant to the European market. For Australasian consumers, this information should be used as a guide to vehicle features only. For more detailed information about Australian child restraints visit [childcarseats.com.au](http://childcarseats.com.au).

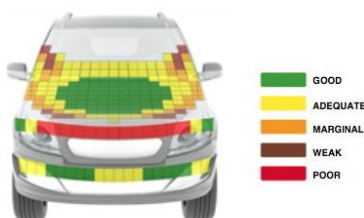
## Pedestrian Protection.

### Pedestrian Test

Scored out of 36 points

|                             |              |
|-----------------------------|--------------|
| Adult & child head impacts: | 18.59 points |
| Upper leg impacts:          | 1.36 points  |
| Lower leg impacts:          | 5.98 points  |

This vehicle scored 25.93 out of 36 points (Acceptable). The bumper scored maximum points for its protection of pedestrians' legs, providing good protection in all areas tested. However, the protection offered to the pelvic region was predominantly poor. The bonnet offered good or adequate protection to the head of a struck pedestrian over almost all of its surface. The XC90's standard-fit autonomous emergency braking system recognises pedestrians and cyclists as well as other cars but it not part of the pedestrian protection scoring in 2015.



(Tested by Euro NCAP v8)

## Score Deductions.

### Deductions from full width frontal test scores

|              |               |
|--------------|---------------|
| Head / neck: | No deductions |
| Chest:       | No deductions |
| Upper legs:  | No deductions |
| Lower legs:  | No deductions |

### Deductions from frontal offset test scores

|              |               |
|--------------|---------------|
| Head / neck: |               |
| Chest:       |               |
| Upper legs:  | No deductions |
| Lower legs:  |               |

### Deductions from side impact test score

|        |               |
|--------|---------------|
| Chest: | No deductions |
|--------|---------------|

### Deductions from pole test score

|       |               |
|-------|---------------|
| Head: | No deductions |
|-------|---------------|

## Safety Features & Technologies.

Descriptions of each of these safety features and safety assist technologies (SAT) and detail on fitting requirements for each star rating level can be found at [ancap.com.au](http://ancap.com.au).

| Safety Feature / Safety Assist Technology                     | Availability |
|---|--------------|
| Seat belts (three-point) for all forward-facing seats         | S            |
| Seat belt pretensioners (all seats)                           | S            |
| Intelligent seat belt reminder (driver)                       | S            |
| Intelligent seat belt reminder (front passenger)              | S            |
| Intelligent seat belt reminder (2 <sup>nd</sup> row seats)    | S            |
| Intelligent seat belt reminder (3 <sup>rd</sup> row seats)    | S            |
| Airbag - Front (driver)                                       | S            |
| Airbag - Front (passenger)                                    | S            |
| Airbag - Side, chest protection (front seats)                 | S            |
| Airbag - Side, chest protection (2 <sup>nd</sup> row seats)   | X            |
| Airbag - Side, head protection (front seats)                  | S            |
| Airbag - Side, head protection (2 <sup>nd</sup> row seats)    | S            |
| Airbag - Side, head protection (3 <sup>rd</sup> row seats)    | S            |
| Airbag - Knee (driver)  | S            |
| Airbag - Knee (front passenger)                               | X            |
| Head restraints for all seats                                 | S            |
| Adaptive cruise control (ACC)                                 | O            |
| Adaptive front lighting systems                               | S            |
| Antilock braking system (ABS)                                 | S            |
| Attention assist (fatigue reminder)                           | S            |
| Automatic headlights  | S            |
| Automatic high beam   | S            |
| Autonomous emergency braking (AEB)                            | S            |
| Blind spot monitoring   | O            |
| Daytime running lights (DRL)                                  | S            |
| Electronic brakeforce distribution (EBD)                      | S            |
| Electronic stability control (ESC)                            | S            |
| Emergency brake assist (EBA)                                  | S            |
| Emergency stop signal   | S            |
| Hill launch assist  | S            |
| Integrated child booster seats for 2nd row                    | S            |
| Lane support system (LSS)                                     | S            |
| Pre-crash systems   | S            |
| Reversing collision avoidance (camera & sensor)               | S            |
| Roll stability system   | S            |
| Run-off road protection (seat design mitigates spinal injury) | S            |
| Secondary brake assist (braking after collision)              | S            |
| Speed assistance - automatic speed limiting (ISA)             | E            |
| Speed assistance - manual speed limiting                      | E            |
| Speed assistance - speed sign recognition & warning           | S            |
| Tyre pressure monitoring system (TPMS)                        | O            |

These specifications are subject to change. Please check with the manufacturer for the latest specifications.

**S** = Standard on all variants.

**O** = Optional on base variant. May be standard on higher variants.

**V** = Not available on base variant but standard or optional on higher variants.

**X** = Not available on any variant.

**E** = Available in Europe / USA but not available on any Australasian variant.

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## Safety Assist.

### Speed Assistance System (SAS)

Scored 0.5 out of 3 points

|                                       |                              |
|---------------------------------------|------------------------------|
| Speed information (sign recognition): | 0.5                          |
| Speed assistance (manual):            | Not available in Australasia |
| Intelligent Speed Assistance          | Not available in Australasia |

### Electronic Stability Control (ESC)

Scored 3.0 out of 3 points

### AEB (Interurban)

Scored 3.00 out of 3 points

|                               |                |
|-------------------------------|----------------|
| Autonomous emergency braking: | 1.5 out of 1.5 |
| Forward collision warning:    | 1.0 out of 1.0 |
| Human machine interface:      | 0.5 out of 0.5 |

### AEB Performance

Approaching a stationary vehicle: 18 out of 18 for Forward Collision Warning (FCW)



Approaching a slow moving vehicle: 11 out of 11 for AEB, 11 out of 11 for FCW



Approaching a braking vehicle with short headway: 2 out of 2 for AEB, 2 out of 2 for FCW



Approaching a braking vehicle with long headway: 2 out of 2 for AEB, 2 out of 2 for FCW



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## Injury Values & Measurements.

| Body Region                   | Frontal offset test<br>at 64km/h<br>(v7) |                 | Full width frontal test<br>at 50km/h<br>(v7) |                | Side impact test<br>at 50km/h<br>(v7) | Pole test<br>at 29km/h<br>(v7) |
|-------------------------------|--|-----------------|--|----------------|---------------------------------------|--------------------------------|
|                               | Driver                                   | Front Passenger | Driver                                       | Rear Passenger | Driver                                | Driver                         |
| <b>Head</b>                   |  |                 |  |                |                                       |                                |
| HIC                           | 132.00                                   | 181.00          | 287.00                                       | 202.00         | 18.00                                 | 364.00                         |
| Acceleration (g for 3ms)      | 38.90                                    | 43.60           | 55.70  | 47.70          | 17.50                                 | 64.17                          |
| <b>Neck</b>                   |  |                 |  |                |                                       |                                |
| Shear (kN)                    | 0.63                                     | 0.35            | 0.32   | 0.80           | -                                     | -                              |
| Tension (kN)                  | 0.93                                     | 0.66            | 1.34   | 1.50           | -                                     | -                              |
| Extension (Nm)                | 5.40                                     | 12.10           | 24.50  | 11.60          | -                                     | -                              |
| <b>Chest</b>                  |  |                 |  |                |                                       |                                |
| Acceleration (g for 3ms)      | -  | -               | -  | -              | -                                     | -                              |
| Compression (mm)              | 20.92                                    | 19.53           | 15.41  | 23.80          | 6.40                                  | 32.37                          |
| Viscous criterion (m/s)       | 0.07                                     | 0.04            | 0.05   | 0.10           | 0.03                                  | 0.31                           |
| <b>Abdomen</b>                |  |                 |  |                |                                       |                                |
| Compression (mm)              | -  | -               | -  | -              | 9.85                                  | 24.56                          |
| <b>Pelvis</b>                 |  |                 |  |                |                                       |                                |
| Force (kN)                    | -  | -               | -  | -              | 0.25                                  |                                |
| <b>Upper legs</b>             |  |                 |  |                |                                       |                                |
| Femur force left (kN)         | 0.58                                     | 0.02            | 1.51   | 0.09           |                                       |                                |
| Femur force right (kN)        | 0.91                                     | 0.00            | 1.89   | 0.16           |                                       |                                |
| Knee displacement left (mm)   | 0.11                                     | 0.22            | 1.40   | -              |                                       |                                |
| Knee displacement right (mm)  | 0.83                                     | 0.96            | 2.73   | -              |                                       |                                |
| <b>Lower legs</b>             |  |                 |  |                |                                       |                                |
| Force left (kN)               | 1.94                                     | 2.01            | -  | -              |                                       |                                |
| Force right (kN)              | 2.56                                     | 1.18            | -  | -              |                                       |                                |
| Index (upper / lower) left    | 0.34 / 0.17                              | 0.20 / 0.23     | -  | -              |                                       |                                |
| Index (upper / lower) right   | 0.27 / 0.31                              | 0.19 / 0.16     | -  | -              |                                       |                                |
| <b>Intrusion Measurements</b> |  |                 |  |                |                                       |                                |
| <b>Steering column</b>        |  |                 |  |                |                                       |                                |
| Forward (mm)                  | 78                                       | -               | 88   | -              |                                       |                                |
| Downward (mm)                 | 38                                       | -               | 44   | -              |                                       |                                |
| Sideways (mm)                 | 4  | -               | 7  | -              |                                       |                                |
| <b>Pedals</b>                 |  |                 |  |                |                                       |                                |
| Accelerator - forward (mm)    | 1  | -               | -  | -              |                                       |                                |
| Accelerator - downward (mm)   | 27                                       | -               | -  | -              |                                       |                                |
| <b>A-Pillar</b>               |  |                 |  |                |                                       |                                |
| Rearward (mm)                 | 9  | -               |  | -              |                                       |                                |

\* ANCAP safety ratings do not automatically extend to variants that have different body styles, engine configurations, driven wheels or occupant restraint systems (e.g. fewer airbags). In these cases, ANCAP considers technical evidence submitted by manufacturers before deciding on extending a rating to additional variants of a model. For further information about the application of ANCAP safety ratings to model variants, see the ANCAP Variant Policy.

^ The Rating Year denotes the year requirements against which a vehicle has been assessed. The Rating Year is determined by ANCAP and may be based on the year in which a new vehicle model is first launched into the Australian and/or New Zealand markets; the year in which the vehicle was tested (if tested by Euro NCAP); or, for vehicles which hold an existing ANCAP safety rating, the year in which the rating was updated (or earlier applicable year).

## Assessment Details.

|                            |                         |
|----------------------------|-------------------------|
| Tested Make / Model        | Volvo XC90 Momentum LHD |
| Tested Vehicle(s) Built    | 2015                    |
| Tested Body Type           | WAGON                   |
| Tested Vehicle Kerb Weight | 2040 kg                 |
| Tested Vehicle Engine      | D5 diesel               |
| Tested By                  | Euro NCAP               |
| Assessed By                | Euro NCAP               |
| Document Reference         | XC90_15                 |
| Document Created / Revised | 20 October 2015         |
| Rating Published           | October 2015            |
| Rating Updated             | N/A                     |



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