

Light Vehicle Inspection Manual

Section 8 Lighting

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Australian Design Rules relevant to this section

ADR 1/...	Reversing lamps
ADR 6/...	Direction indicator lamps
ADR 13/...	Installation of lighting on other than L group vehicles
ADR 19/...	Installation of lighting on L group vehicles
ADR 45/...	Lighting not covered by ECE regulations
ADR 46/...	Headlamps
ADR 47/...	Reflex reflectors
ADR 48/...	Rear registration plate illuminating devices
ADR 49/...	Front and rear position (side) lamps, stop lamps and end-outline marker lamps
ADR 50/...	Front fog lamps
ADR 51/...	Filament lamps
ADR 52/...	Rear fog lamps
ADR 60/...	Centre high mounted stop lamps
ADR 67/...	Installation of lighting on three wheel vehicles
ADR 74/...	Side marker lamps
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OBJECTIVE: To ensure that all lights, reflectors and other electrical lighting components as required by prescribed standards are operational.

Note: i. Any reference to “lights” means the same as “lamps” and vice versa.

8.1. Visually inspect the compulsory reflectors fitted to the rear of the vehicle

Reason for rejection

- a) Red reflector(s) are damaged, discoloured or missing.

Note: ii. Reflectors may be incorporated in the lamp assembly.

8.2. Visually inspect and check the operation of all mandatory lights fitted to the vehicle

Reasons for rejection

- a) Any of the following lights do not work or has an incorrect colour:
- i. Headlight (high/low beam) (white)
 - ii. Front park or side lights (white) – see **Note iii**
 - iii. Tail lights (red)
 - iv. Brake light(s) (red)
 - v. Reversing lights (white) – see **Note iv**
 - vi. Turn signal indicator lights (yellow) - see **Note iv**
 - vii. Clearance lights (front: yellow/white, side: yellow, rear: yellow/red)
 - viii. Side marker lights (yellow or yellow to front/red to rear) - see **Note iii & iv**
 - ix. Number plate light (white).

Note: iii. *A front park light may be yellow if the light functions as a park light and side marker light.*

 iv. **Colour option for lights may vary depending on the age and type of vehicle – refer to vehicle position requirements.*

- b) Any rear light other than a reversing light is in a condition or damaged to the extent that white light shows to the rear of the vehicle.
- c) Any yellow clearance light or front yellow turn signal is damaged so that it shows white light (except vehicles prior to 7/73).
- d) The number plate light is not directing light onto the surface of the rear number plate.
- e) Any optional lights or reflectors interfere with any compulsory lights or reflectors.
- f) Any light that is tinted, coated or covered that affects the visibility or intensity of the light and its intended operation.
- g) Additional lighting (fitted as accessories) are fitted in such a way that their operation will impair the operation of regulatory lighting, and contravene prescribed standards.
- h) Lights as follows are not fitted to a vehicle (dimensions at centre of lights).

At front of vehicle:

- i. White main beam headlights (high beam or driving light), Oct 1991 onwards the main beam headlights must not be positioned to be wider than the dipped (low) beam headlights.
- ii. Two White dipped (low) beam headlights, min 500mm and max 1400mm (1200 mm Oct 1991 onwards) off ground, min 600mm separation.
- iii. White park lights, min 500mm (350 mm Oct 1991 onwards) off ground, max 510mm (400 mm October 1991 onwards) inboard of vehicle side, wired to remain 'on' with headlights if vehicle built after 1969.

Note: v. *Vehicles manufactured prior to June 1953 are not required to be fitted with park lights.*

- iv. Yellow turn signal indicators (7/73 onwards, pre 7/73 may be white), min 350mm and max 1500mm from the ground (if 1500mm not practicable 2100mm), min 400mm separation if vehicle less than 1300mm wide or 600mm if vehicle over 1300mm wide, max 500mm inboard of vehicle side.

Note: vi. *Vehicles manufactured prior to August 1966 are not required to be fitted with directional indicators.*

- v. Two Yellow or White clearance lights (where vehicle is over 2.2m wide), min 750mm above headlights, max 400mm inboard of side of vehicle.

Note: vii. *Front clearance lights must not be fitted to a vehicle that is less than 1.8 metres in width.*

- vi. Two hazard warning lights (in accordance with ADR 13/... applicability, 10/91 onwards), incorporated with turn signal indicators.

At side of vehicle:

- i. Side marker lamps with yellow to front, red to rear (where vehicle is more than 2.2m wide and/or 7.5m long), min 600mm and max 1500mm off ground, max 300 mm from rear of vehicle.
- ii. November 1991 onwards - 2 yellow side turn signal indicators that are less than 1800mm from the front of the vehicle and more than 500 mm above the ground and less than 1500mm above the ground.

At rear of vehicle:

- i. For a vehicle manufactured between 1934 and 1959 vehicle, a single tail light in the centre or to the right side of vehicle.
- ii. For a vehicle manufactured after 1959 two red tail lights, max 1500mm off ground or where this is not practicable a maximum of 2100mm from the ground.
- iii. Two Red reflectors, max 1500mm off ground, max 400mm (250mm if vehicle more than 2.2m wide) inboard of side of vehicle.
- iv. White registration plate lamp/s, to illuminate registration plate.
- v. For a vehicle manufactured between 1934 and 1959 vehicle, a single stop light in the centre or to the right hand side of vehicle.
- vi. For a vehicle manufactured after 1959 two red stop lights, min 350mm and max 1500mm off ground.

Note: viii. *A brake light may flash as an indicator for a vehicle manufactured prior to 1973 – see Vehicle Inspectors Bulletin VIB24 Red Rear Indicator Lights and Flashing Brake Lights - <https://nt.gov.au/driving/industry/vehicle-information-bulletins-and-forms>*

- vii. One red rearward facing centre high mounted brake light that is mounted at the rear window or the rear of the vehicle. Applicable 1/7/1989 onwards for passenger cars (MA), 1 July 1996 onwards for forward control and off road passenger vehicles (MB & MC) and September 2007 onwards for light goods vehicles up to 3.5t GVM (NA 1&2),
- viii. Yellow (red permitted prior to 7/73) turn signal indicators, min 350mm and max 1500mm off ground, min 600mm separation.

Note: ix. *Vehicles manufactured prior to August 1966 are not required to be fitted with directional indicators.*

- ix. Two Hazard warning lights (10/91 onwards), incorporated with turn signal indicators.
- x. 01/72 onward for passenger cars and 07/73 onwards for other light motor vehicles, optional on trailers, 1 or more white/amber (10/91 onwards the light must be white) rearward facing reverse lamp/s.

8.3. Visually inspect and check the installation and operation of all optional lights fitted to the vehicle

Note: x. *The installation of the lights mentioned in this part (8.3) is optional, however if the lights are fitted, they are required to comply with the following "Reasons for rejection".*

Reasons for rejection

a) Driving Lights

- i. The lamp/s show a colour other than white.
- ii. The lamps are not forward facing.
- iii. The lamps can be switched on other than when the main beam headlamps are switched on.
- iv. The lamps are fitted in a way that causes a dangerous protrusion.
- v. Due to the mounting position, light is emitted that would cause discomfort to the driver either directly or indirectly from reflected surfaces.
- vi. More than 4 main beam headlights are fitted.
- vii. More than 8 combined main beam headlights and driving lights are fitted.

b) Front Fog lights (October 1991 onwards)

- i. The lamps shows a colour other than white or yellow.
- ii. More or less than 2 fog lamps are fitted (1 lamp is to be fitted to each side).
- iii. The lamps are not forward facing.
- iv. The lamps are mounted less than 250mm above the ground or more than 800 mm above the ground.

- v. The lamps are mounted higher than the dipped beam headlamps.
- vi. The lamps are mounted more than 400 mm in from the extreme outer edge of the vehicle.
- vii. It is not possible to switch the lights on and off independent of the main and dipped beam headlights.
- viii. (01/2001 onwards) The fog lights are not fitted with an independent tell-tale warning light that illuminates when the lights are switched on.
- ix. The fog lamps are not aligned to show light at 5 degrees up and down, and 10 degrees inward and 45 degrees outward.
- x. Due to the mounting position, light is emitted that would cause discomfort to the driver either directly or indirectly from reflected surfaces.

c) Front Fog lights (pre October 1991)

- i. The lamps shows a colour other than white or yellow.
- ii. More or less than 2 fog lamps are fitted to the vehicle. (1 lamp is to be fitted to each side).
- iii. The lamps are not forward facing.
- iv. The lamps are mounted higher than the dipped beam headlamps.
- v. The lamps are mounted more than 400 mm in from the extreme outer edge of the vehicle.
- vi. It is not possible to switch the lights on and off independent of the main and dipped beam headlights.
- vii. The light from the fog lights reflects off the vehicle into the drivers eyes.

d) Rear Fog Lights (October 1991 onwards)

- i. The lamp/s show a colour other than red.
- ii. More than 2 lamp/s are fitted (if a single lamp is fitted it must be mounted centrally or be to the right-hand side of the vehicle)
- iii. The lamp/s are not mounted to the rear of the vehicle and rearward facing.
- iv. The lamp/s are mounted less than 250 mm above the ground or more than 1000mm above the ground.
- v. The rear fog lamp/s can be switched on when the main beam or dipped beam or front fog lights are switched off.
- vi. The rear fog lamp/s cannot be switched off independent of all other lights.
- vii. The vehicle fitted with a rear fog light is not fitted with an independent tell-tale warning light that illuminates when the light/s are switched on.
- viii. The rear fog lamp/s are not aligned to show light at 5 degrees up and down, and 10 degrees inward and 45 degrees outward of the vehicle.
- ix. The lamps are fitted in a way that causes the light from the lamp to either directly or in-directly cause discomfort to the driver.

e) Rear Fog Lights (pre October 1991)

- i. The lamp/s show a colour other than red.
- ii. More than 2 lamps are fitted (if a single lamp is fitted it must be mounted centrally or be to the right-hand side of the vehicle).
- iii. The lamp/s are not mounted to the rear of the vehicle and rearward facing.
- iv. The lamp/s use over 27 watts of power singularly or 54 watts collectively.
- v. The lamp/s are mounted more than 1500mm above the ground.
- vi. The fog lamps are not fitted with a tell-tale warning that indicates to the driver that the lamp/s are switched on.

f) Daytime running lights (October 1991 onwards)

- i. The lamps shows a colour other than white.
- ii. Other than two lamps are fitted to the vehicle.
- iii. The lamps are not mounted at the front of the vehicle and forward facing.
- iv. The light is mounted less than 250 mm above the ground or more than 1500mm above the ground.
- v. The lamps are mounted more than 510mm in from the extreme outer edge of the vehicle.
- vi. The inner edges of the daytime running lights are less than 600mm apart (400mm if the vehicle width is less than 1.3m).
- vii. The daytime running lights do not automatically switch on when the vehicle ignition is in the on position.
- viii. The daytime running lights do not automatically switch off when headlamps or front fog lights are switched on.
- ix. The lamps are not aligned to show light at 10 degrees up and down, and 20 degrees to the left and right.
- x. The lamps are fitted in a way that causes the light from the lamp to either directly or in-directly cause discomfort to the driver.

g) Daytime Running Lights (pre October 1991)

- i. The lamps shows a colour other than white.
- ii. More or less than 2 lamps are fitted.
- iii. The lamps are not mounted at the front of the vehicle and forward facing.
- iv. The lamps are mounted more than 510mm in from the extreme outer edge of the vehicle to the centre of the light.
- v. The centres of the daytime running lights are less than 600mm apart (400mm for vehicle less than 1.3m in width).
- vi. The daytime running lights do not automatically switch off when headlamps are switched on.
- vii. The lamps are fitted in a way that causes the light from the lamp to either directly or in-directly cause discomfort to the driver.

h) Cornering lamps

- i. The lamps shows a colour other than white or yellow.
- ii. More or less than 2 cornering lamp are fitted to each side of the vehicle. (1 lamp is to be fitted to each side).
- iii. The lamps are mounted more than 2000 mm from the front of the vehicle.
- iv. The lamps are mounted less than 250mm above the ground or more than 900 mm above the ground.
- v. The lamps are mounted higher than the dipped beam headlamps.
- vi. The lamps are mounted more than 400 mm in from the extreme outer edge of the vehicle.
- vii. The cornering lamps do not automatically switch on when the headlamp control switch is in the on position; and the directional indicators on the same side of the vehicle are on.

Note: xi. *The installation and operation of Cornering lamps may also comply with 6.20 of Appendix A, UN ECE regulation R48/04 which mandates different position dimensions; and additional switching and speed related requirements.*

8.4. Visually inspect and check condition of all lights fitted to the vehicle

Reasons for rejection

- a) Any light is not clearly visible under all normal conditions and of a consistent intensity, or are affected by dirty lenses or poor electrical contact.
- b) Reflector surfaces are not free of tarnish or other damage, which could reduce the intensity of high or low beam.
- c) Headlights are not correctly adjusted.
- d) Lenses and light reflectors are not securely mounted, are faded or discoloured and are not free from cracks, holes, or other damage which would allow the entry of moisture or dirt to impair the efficiency of the light or reflector.
- e) The lamps are fitted in a way that causes a dangerous protrusion.

8.5. Visually inspect and check light switch operation

Reasons for rejection

- a) The headlight high beam tell-tale indicator light is not operating.
- b) Additional driving lights do not operate in conjunction with the high beam circuit.
- c) The high/low headlight switch and turn signal switch is not readily operable by the driver from the driving position and, if fitted as original equipment by the manufacturer, is not self-cancelling.
- d) The turn signal operation is not indicated by means of a visible and/or audible tell-tale.

- e) The reverse light (if applicable) operates other than when reverse gear is selected and the ignition is in the on position or the engine is running.
- f) Any fog lights fitted cannot be switched independently of the main or dipped beam headlamps.
- g) Fog light switch (after December 2000) does not have a visual tell-tale indicator to indicate that the switch is on.

8.6. Visually inspect front and rear lights for the presence of tinted covers

Reasons for rejection

- a) Any light has a tinted cover over it, or any tinting applied to it.
- b) There is any opaque cover over a headlight which cannot be readily removed without the use of tools.

8.7. Using a headlight tester, check the aim of the headlights

Reasons for rejection

- a) The aim of the headlight is adjusted such that, when on high beam and measured at an effective distance of 8m, the projected centre of the beam is to the right of the headlight centre and/or is above the headlight centre.
- b) When measured at an effective distance of 8m, any part of the top edge of the high intensity portion of the low beam pattern is above and/or to the right of the centreline of the headlight.

Note:

- xii. *In the region above and to the right of the centreline of the headlight the luminous intensity must not exceed 437cd. The portion of the beam to the left of the centreline of the light may extend above the height of the centreline of the headlight. The 'centreline of the headlight' passes through the centre of the globe filament, or equivalent.*
- xiii. *If an inspection is carried out in a remote location where testing equipment is not available, any suitable structure may be used to determine the headlight aim does not fall within the Reasons for Rejection listed above.*

8.8. Visually inspect the headlights

Reasons for rejection

- a) Headlight reflector is tarnished or peeling to the extent that headlight performance is impaired.
- b) Headlight lens is incomplete.
- c) Headlight assembly is not secured.
- d) Dipped (low) beam headlamps fitted with HID light sources exceeding 2000 Lumens that are not fitted with headlamp self-levelling devices.
- e) Dipped (low) beam headlamps fitted with HID light sources exceeding 2000 Lumens that are not fitted with headlamp cleaners.
- f) Headlight globes have been replaced by aftermarket LED style globes.

Note: xiv. For further information

- a. Appendix I 'Lighting Standards'
- b. Appendix J 'Headlamp Testing Screens'
- c. Information Bulletin V14 Additional Lighting: Driving, Fog and Search Lights - <https://nt.gov.au/driving/industry/vehicle-information-bulletins-and-forms>
- d. Information Bulletin V15 High Output Light Source Lamps - <https://nt.gov.au/driving/industry/vehicle-information-bulletins-and-forms>