



Vehicle Standard (Australian Design Rule 45/01 – Lighting and Light Signalling Devices not Covered by ECE Regulations) 2006

I, JAMES ERIC LLOYD, Minister for Local Government, Territories and Roads,
determine this vehicle standard under subsection 7 (1) of the *Motor Vehicle Standards
Act 1989*.

Dated 26 April 2006

[SIGNED]

James Eric Lloyd

Minister for Local Government, Territories and Roads

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0. LEGISLATIVE PROVISIONS

0.1. NAME OF STANDARD

- 0.1.1. This Standard is the Vehicle Standard (Australian Design Rule 45/01 – Lighting and Light Signalling Devices not Covered by ECE Regulations) 2006.
- 0.1.2. This Standard may also be cited as Australian Design Rule 45/01 — Lighting and Light Signalling Devices not Covered by ECE Regulations.

0.2. COMMENCEMENT

- 0.2.1. This Standard commences on the day after it is registered.

0.3. REPEAL

- 0.3.1. This Standard repeals each vehicle standard with the name Australian Design Rule 45/01 — Lighting and Light Signalling Devices not Covered by ECE Regulations that is:
- (a) made under section 7 of the Motor Vehicles Standard Act 1989; and
 - (b) in force at the commencement of this Standard.
- 0.3.2. This Standard also repeals each instrument made under section 7 of the Motor Vehicles Standard Act 1989 that creates a vehicle standard with the name Australian Design Rule 45/01 — Lighting and Light Signalling Devices not Covered by ECE Regulations, if there are no other vehicle standards created by that instrument, or amendments to vehicle standards made by that instrument, that are still in force at the commencement of this Standard.

PURPOSE AND SCOPE

The function of this Australian Design Rule is to specify the photometric requirements for lighting and light-signalling devices which will ensure adequate illumination for the driver of the vehicle and signal to other road users the position, orientation, intention and movement of the vehicle, without producing undue glare for other road users.

APPLICABILITY AND IMPLEMENTATION

This ADR applies to the design and construction of vehicles as set out in the table below.

‘Side Marker Lamps’, ‘External Cabin Lamps’, ‘Passenger Car Side Marker Lamps’, ‘Search Lamps’, ‘Internal Lamps’, ‘Rear Marking Plates’, ‘Daytime Running Lamps’, cornering lamps and conspicuity lamps fitted to the vehicles specified below shall comply with the relevant requirements of this Australian Design Rule.

The circumstances under which lamps are mandatory, optional, alternative or prohibited are set out in either ADR 13/..., ADR 19/... or ADR 67/...

Vehicles certified to any of the "Acceptable Prior Rules" as shown below in the Applicability Table for a particular vehicle category shall be deemed to comply with this Rule.

Applicability Table

Vehicle Category	ADR Category Code	UNECE Category Code	Manufactured on or After	Acceptable Prior Rules
Moped 2 wheels	LA	L1	N/A	
Moped 3 wheels	LB	L2	1 Mar 1992	/00
Motor cycle	LC	L3	1 Mar 1992	Nil
Motor cycle and sidecar	LD	L4	1 Mar 1992	Nil
Motor tricycle	LE	L5	1 Mar 1992	/00
Passenger car	MA	M1	1 Jan 1992	/00
Forward-control passenger vehicle	MB	M1	1 Jan 1992	/00
Off-road passenger vehicle	MC	M1	1 Jan 1992	/00
Light omnibus	MD	M2	1 July 1992	/00
Heavy omnibus	ME	M3	1 July 1992	/00
Light goods vehicle	NA	N1	1 July 1992	/00
Medium goods vehicle	NB	N2	1 July 1992	/00
Heavy goods vehicle	NC	N3	1 July 1992	/00
Very light trailer	TA	O1	1 July 1992	/00
Light trailer	TB	O2	1 July 1992	/00
Medium trailer	TC	O3	1 July 1992	/00
Heavy trailer	TD	O4	1 July 1992	/00

45.1. DEFINITIONS

45.1.1. Refer to Vehicle Standard (Australian Design Rule Definitions and Vehicle Categories) 2005.

45.2. GENERAL SPECIFICATIONS

45.2.1. Lamps shall be so designed and constructed that in normal use, despite the vibrations to which they may then be subjected, they continue to function satisfactorily and retain the characteristics prescribed by this Rule.

45.2.2. The colour of the light emitted shall be within the limits of the co-ordinates prescribed in clause 45.2.2.1 for the colour in question.

45.2.2.1. Colours of Lamps: Trichromatic Co-ordinates

Red:

limit towards yellow: $y \leq 0.335$
 limit towards purple: $z \leq 0.008$

White:

limit towards blue: $x \geq 0.310$
 limit towards yellow: $x \leq 0.500$
 limit towards green: $y \leq 0.150 + 0.640x$
 $y \leq 0.440$
 limit towards purple: $y \geq 0.050 + 0.750x$
 limit towards red: $y \geq 0.382$

Amber:

limit towards yellow: $y \leq 0.429$
 limit towards red: $y \geq 0.398$
 limit towards white: $z \leq 0.007$

45.2.2.2. For verifying the limits above, a source of light at a colour temperature of 2,856 K (illuminant A of the International Commission on Illumination (CIE)), in combination with appropriate filters, may be used.

45.3. INDIVIDUAL SPECIFICATIONS

45.3.1. 'SIDE MARKER LAMP' {

45.3.1.1. Colour of light emitted Amber/red (see Figure 1).

45.3.1.2. Intensity of light emitted

45.3.1.2.1. Minimum: 0.3 cd within the angles of light distribution of clause 45.3.1.3.

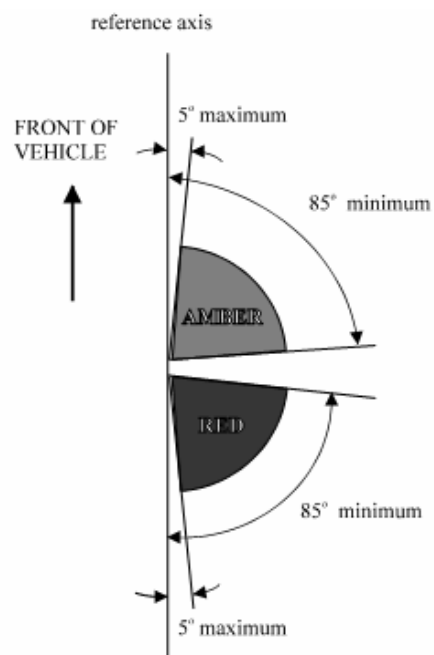
45.3.1.2.2. Maximum: 12 cd in any direction. However, for 'Side Marker Lamps' combined with front position (side) lamps, luminous intensity of 60 cd shall be permitted within a forward angle from 45° inboard to 80° outboard.

45.3.1.3. Angles of light distribution

45.3.1.3.1. Vertical: from 10° above to 10° below the horizontal.

45.3.1.3.2. Horizontal: See **Figure 1**.

45.3.1.4. Other requirements None.



ANGLES OF HORIZONTAL LIGHT DISTRIBUTION

FIGURE 1

Note: Righthand requirements are as shown.

Left hand requirements are the same but opposite hand

- 45.3.2. 'EXTERNAL CABIN LAMP'
 - 45.3.2.1. Colour of light emitted Amber.
 - 45.3.2.2. Intensity of light emitted
 - 45.3.2.2.1. Minimum: 0.3 cd within the angles of light distribution of clause 45.3.2.3.
 - 45.3.2.2.2. Maximum: 12 cd in any direction.
 - 45.3.2.3. Angles of light distribution:
Vertical: from 5° above to 15° below the horizontal.
Horizontal: forward from 45° to the left to 45° to the right.
 - 45.3.2.4. Other requirements None.
 - 45.3.3. 'PASSENGER CAR SIDE MARKER LAMP'
 - 45.3.3.1. Colour of light emitted
 - 45.3.3.1.1. Front: amber.
 - 45.3.3.1.2. Rear: red.
 - 45.3.3.2. Intensity of light emitted
 - 45.3.3.2.1. Minimum: 0.25 cd within the angles of light distribution of clause 45.3.3.3.
 - 45.3.3.2.2. Maximum: 15 cd in any direction.
 - 45.3.3.3. Angles of light distribution
 - 45.3.3.3.1. Vertical: from 10° above to 10° below the horizontal.
 - 45.3.3.3.2. Horizontal: from 45° forwards to 45° rearwards.
 - 45.3.3.4. Other requirements None.
 - 45.3.4. 'SEARCH LAMP'
 - 45.3.4.1. Colour of light emitted White.
 - 45.3.4.2. Intensity of light emitted No requirement.
 - 45.3.4.3. Angles of light distribution No requirement.
 - 45.3.4.4. Other requirements None.
 - 45.3.5. 'INTERNAL LAMP'
 - 45.3.5.1. Colour of light emitted No requirement.
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- 45.3.5.2. Intensity of light emitted No requirement.
- 45.3.5.3. Angles of light distribution No requirement.
- 45.3.5.4. Other requirements None.
- 45.3.6. 'REAR MARKING PLATE'
- 45.3.6.1. Colours of light reflected Red and yellow.
- 45.3.6.2. Photometric properties
Not less than that required by AS 1906 - 1976 - "Retroreflective Materials and Devices for Road Traffic Control Purposes Part 1 - Retroreflective Materials" - for Class 2 material.
- 45.3.6.3. Physical properties
- 45.3.6.3.1. Material: Retroreflective surface.
- 45.3.6.3.2. Durability: Not less than that required by the AS document referred to in clause 45.3.6.2.
- 45.3.6.4. Dimensions See **Figure 2**. The dimensions shown are in mm, with a general tolerance of ± 5 mm or $\pm 5^\circ$.
- 45.3.6.5. Other requirements
- 45.3.6.5.1. Each plate shall bear the name of the manufacturer and a statement identifying the class of material used and the standard to which it is manufactured.
- 45.3.6.5.2. The combined area for a vehicle set shall be 0.32 square metres.
- 45.3.6.5.3. A yellow margin of up to 5 mm width is allowed on the outside edges of the red (if required for ease of manufacture).

45.3.6.5.4. The warning sign "DO NOT OVERTAKE TURNING VEHICLE" may, where applicable, be printed in black lettering 50 mm high on the yellow portion of one of the "Category 1" plates.

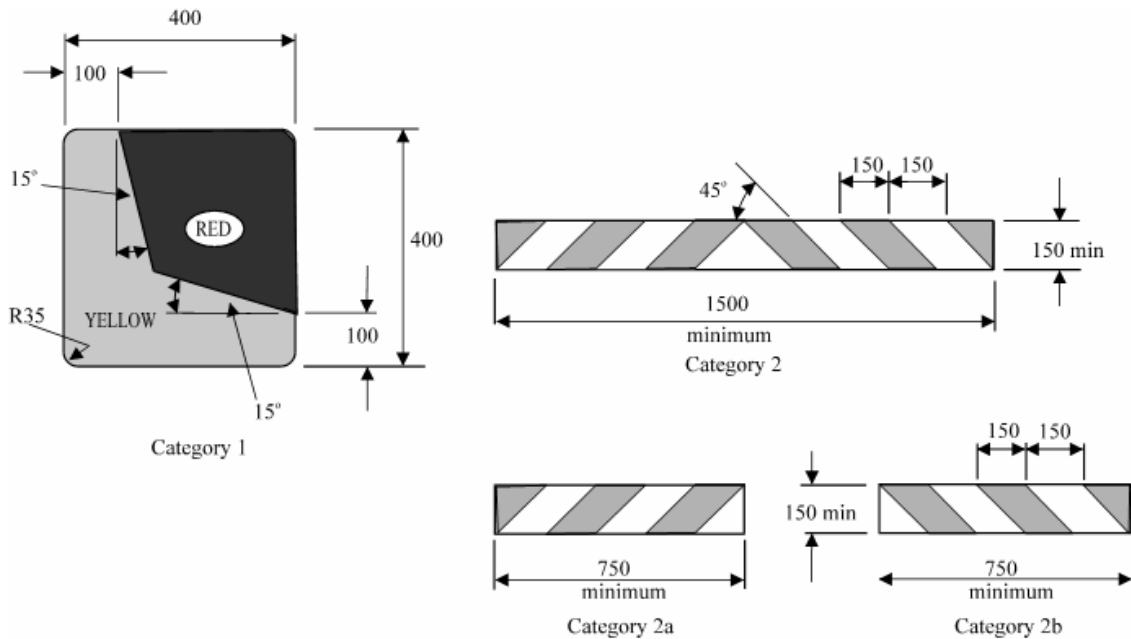


Figure 2

45.3.7. 'DAYTIME RUNNING LAMP'

45.3.7.1. Colour of light emitted White.

45.3.7.2. Intensity of light emitted

45.3.7.2.1. Minimum: 130 cd on the axis of reference; 0.3 cd within the angles of light distribution of clause 45.3.7.3.

45.3.7.2.2. Maximum: 520 cd in any direction.

45.3.7.2.3. In each direction corresponding to the points in the light distribution table reproduced in Table 1, be not less than the product of 130 cd by the percentage specified in the said Table for the direction in question.

45.3.7.3. Angles of light distribution

Vertical: from 15° above to 15° below the horizontal.
 Horizontal: from 45° inwards to 80° outwards.

45.3.7.4. Other requirements None.

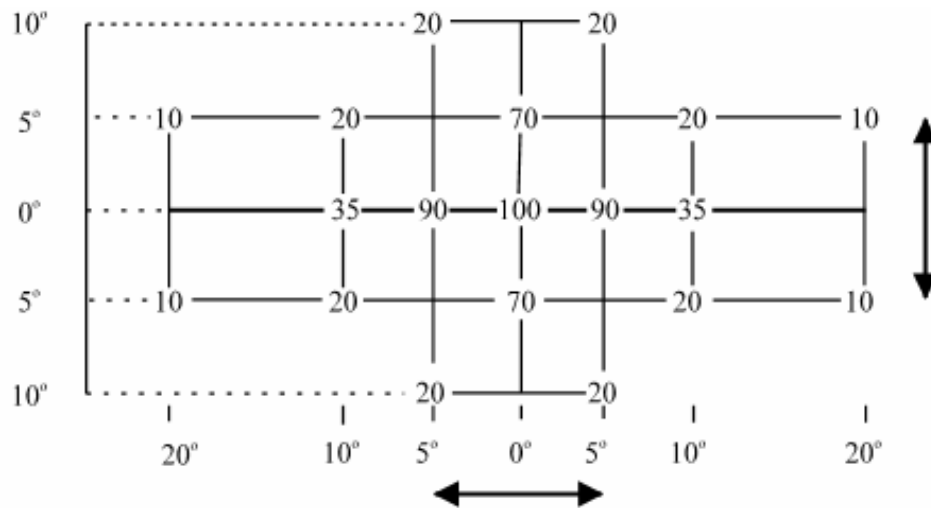


Table 1

45.3.8. CORNERING LAMP

(a cornering lamp is a steady-burning lamp at the front of a vehicle, used in conjunction with the direction-indicator system, to supplement the headlamps by providing additional illumination in the direction of turn).

45.3.8.1. Colour of light emitted White or amber.

45.3.8.2. Intensity of light emitted

Maximum 5,000 cd in any direction. The maximum intensity of light emitted above the horizontal shall not exceed the values of maximum light intensity for the passing beam of headlamps when measured above the horizontal in accordance with the requirements of ADR 46/... "Headlamps for vehicles other than L-group vehicles".

45.3.8.3. Angles of light distribution No requirement.

45.3.8.4. Other requirements None.

45.3.8.5. Alternative standards

Lamps to SAE J852b February, 1965 "Cornering Lamps" shall be deemed to be equivalent to the technical requirements of this clause.

45.3.9. CONSPICUITY LAMP

45.3.9.1. Colour of light emitted White.

45.3.9.2. Intensity of light emitted

45.3.9.2.1. Minimum 600 cd in the axis of reference.

45.3.9.2.2. Maximum 1,200 cd in any direction.

45.3.9.2.3. In any direction corresponding to the points of light distribution table reproduced in **Table 2**, not less than the product of 600 cd by the percentage specified in the said Table for the direction in question.

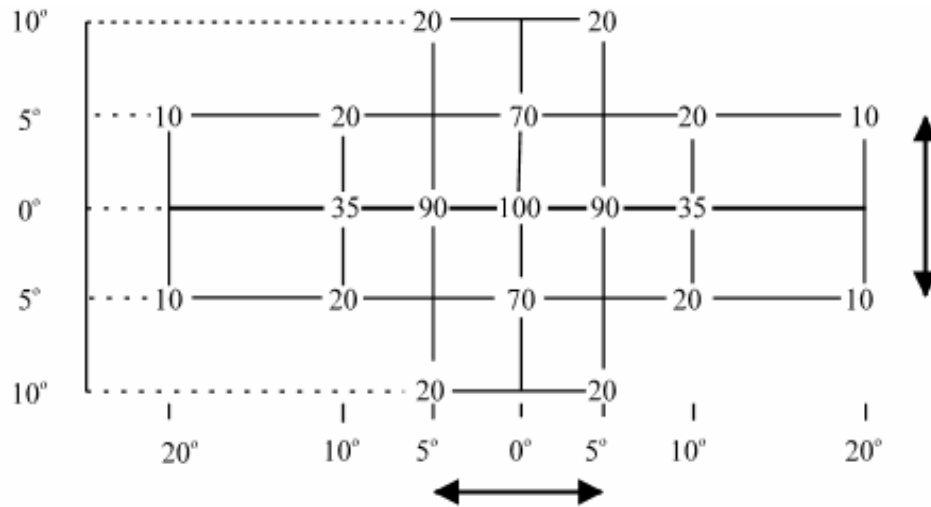


Table 2

45.3.9.3. Angles of light distribution:
 Vertical: from 15° above to 15° below the horizontal.
 Horizontal: from 80° inwards to 80° outwards.

45.3.9.4. Other requirements None.

45.4. TEST PROCEDURES

45.4.1. All measurements shall be made with a standard filament globe of the category prescribed for the device, the supply voltage being so regulated as to produce the normal luminous flux prescribed.

45.4.2. Photometric measurements

45.4.2.1. Measurement methods

45.4.2.1.1. During photometric measurements, stray reflections shall be avoided by appropriate masking.

45.4.2.1.2. Measurements shall be carried out in such a way as to meet the following requirements:

45.4.2.1.2.1. The distance of measurement shall be such that the law of the inverse of the square of the distance is applicable;

45.4.2.1.2.2. The measuring equipment shall be such that the angular aperture of the receiver viewed from the reference centre of the light is comprised between 10' and one degree;

- 45.4.2.1.2.3. The intensity requirement for a particular direction of observation shall be deemed to be satisfied if that requirement is met in a direction deviating by not more than one-quarter of a degree from the direction of observation.