

# 20 Installation of Lights

Application: All Vehicles	
Method of Inspection	Required Standard
<p>The examiner will perform a visual check of all lamps and reflectors fitted to the vehicle, for the incorrect colour light visible to the front or rear and for any obscured surfaces</p> <p><b>Exemption from one or more of the technical requirements is permitted for a special purpose vehicle where the special purpose makes it impossible to fully comply provided that all mandatory devices are installed and geometric visibility is unaffected.</b></p> <p><b>Note 1:</b> Lamp/reflector <b>lateral position</b> is measured from the extreme outer edge of the vehicle (disregarding tyres, mirrors, lamps and reflectors) to the edge of the illuminated area (or reflective surface on a reflector) nearest that side of the vehicle. Lamp/reflector <b>vertical position</b> is measured from the ground to the upper edge of the illuminated surface.</p> <p>In the case of the <b>minimum</b> height to the lower edge of the illuminated area (reflective surface on a reflector).</p> <p>In the case of the <b>maximum</b> height to the top edge of the illuminated area (reflective surface on a reflector).</p> <p>In the case of lamp or reflector <b>separation</b> the distance must be measured to the edge of the illuminated area (reflective surface on a reflector).</p>	<ol style="list-style-type: none"> <li>1. The vehicle must be fitted with lamps or retro reflective material only capable of showing a white light to the front except for: <ul style="list-style-type: none"> <li>• an amber light from a direction indicator</li> <li>• a yellow light from a front fog lamp</li> <li>• a yellow light from a front end outline marker lamp</li> <li>• an amber light from a side marker light</li> <li>• emergency vehicles only, a blue light from a warning lamp or beacon.</li> </ul> </li> <li>2. The vehicle must be fitted with lamps or retro reflective material only capable of showing a red light to the rear except for: <ul style="list-style-type: none"> <li>• an amber light from a direction indicator</li> <li>• a white light from a work lamp, reversing lamp, interior lamp, or a registration plate lamp</li> <li>• a yellow light from a registration plate</li> <li>• an amber light from a side marker light</li> <li>• emergency vehicles only, a blue light from a warning lamp or beacon.</li> </ul> </li> </ol>

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<p><b>Note 2: Rear Fog Lamp to Rear Brake Lamp separation</b> distance must be measured between the “illuminating surface” of each lamp. “Illuminating Surface” should be taken to be the area of the “reflector” to the rear of the bulbs.</p> <p>Where lamps are mounted in a common housing and are “E” marked, the separation criteria should be assumed to be met.</p> <p><b>Note 3:</b> The <b>brightness of lamps</b> bearing an appropriate approval mark defines the acceptable standard. Lamps not bearing such a mark should emit light of similar brightness.</p> <p><b>Note 4: Headlamps</b> should not be compared for brightness, but should emit sufficient light to illuminate the road in front of the vehicle on both main and dipped beams.</p> <p><b>Note 5: Lamp security</b> must be assessed taking account of the method of attachment intended by the manufacturer. Double-sided tape is to be considered acceptable only in situations where it is the manufacturer’s intended method.</p> <p><b>Note 6: Lamp position.</b> Achieving position requirements by masking <b>external</b> parts of the illuminated area is not acceptable. However except for headlamps, <b>internal</b> masking or internal painting of lamp lenses is permitted but this must be permanent and must not affect lamp intensity.</p> <p><b>Note 7:</b> For the purposes of the test, lamps that are intended to illuminate the road forward of the vehicle are considered to be either;</p> <ol style="list-style-type: none"> <li>main beam headlamps (including spot lamps and driving lamps)</li> <li>dipped beam headlamps, or</li> <li>front fog lamps.</li> </ol>	<p>3. All lamps and reflectors fitted to the vehicle must be fixed and not move by swivelling, deflecting or otherwise while the vehicle is in motion, except for:</p> <ul style="list-style-type: none"> <li>any lamp or reflector which by design can be deflected to the side with the movement of the front wheel or wheels of the vehicle when turned for the purpose of steering the vehicle</li> <li>a headlamp for adjustment or dipping of the beam</li> <li>a headlamp which can be retracted or concealed</li> <li>a work lamp, used to illuminate a working area or the scene of an accident, breakdown or road works in the vicinity of the vehicle to which it is fitted.</li> </ul> <p>4. All obligatory and optional lamps and reflectors must be securely fitted to the vehicle,</p> <p>5. When every door, tailgate, boot lid, or other movable part is in the fixed open position (any position in which the component will remain, with or without a fixed stay) the</p> <ul style="list-style-type: none"> <li>front and rear position lamps</li> <li>front and rear indicators</li> <li>rear retro reflectors</li> </ul> <p>must have part of the apparent surface visible.</p> <p>6. All lamps must emit light of an equivalent brightness and colour when compared to an e approved lamp of the same type</p>

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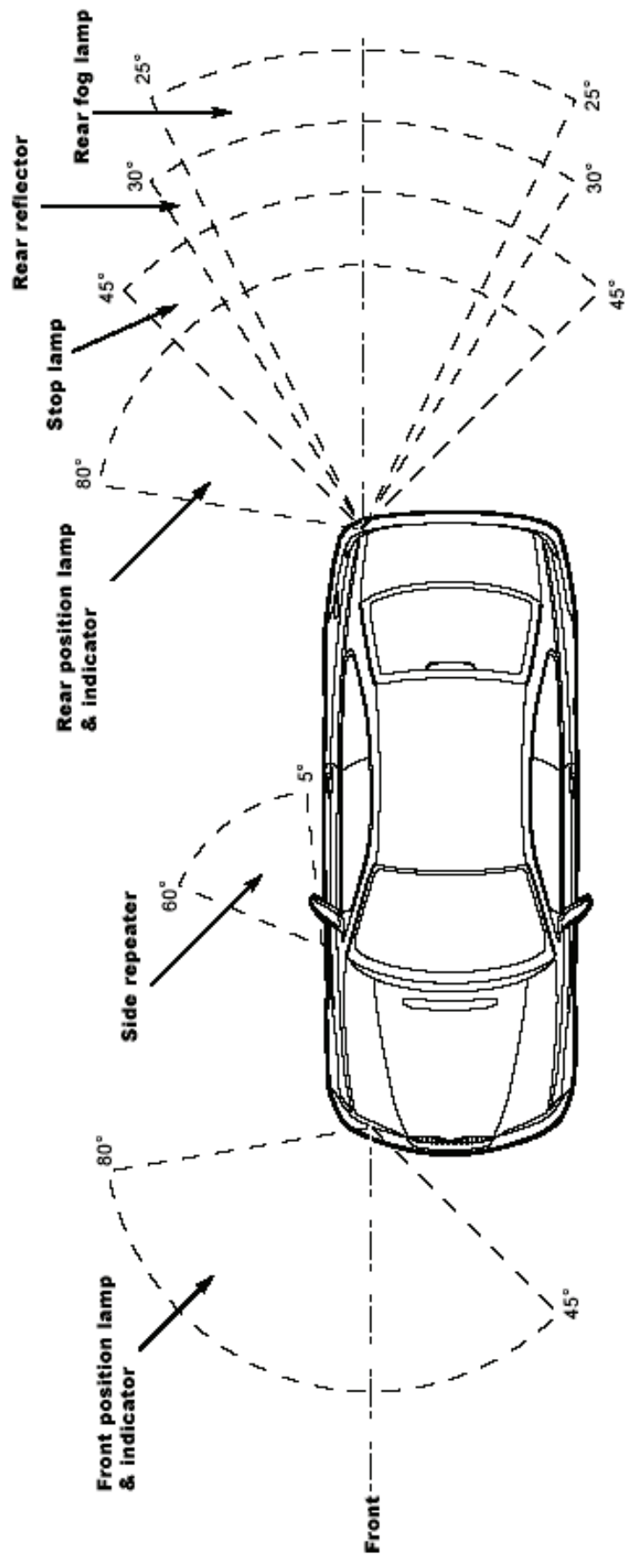
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<p>If an additional lamp, capable of illuminating the road in front of the vehicle;</p> <ul style="list-style-type: none"> <li>• Only illuminates when the main beam headlamps are in operation, it will be considered to be a main beam headlamp (see “a” above)</li> <li>• Illuminates every time the obligatory dipped beam headlamps are operated and cannot be switched on and off independently, it is considered to be a dipped beam headlamp</li> <li>• Illuminates by the operation of an independent switch when the dipped beam headlamps are operational and has a wide flat-topped beam, it is considered to be a front fog lamp.</li> </ul>	

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**Figure 1**

**Horizontal Angles of Visibility**

Each lamp and reflector must be positioned such as to provide an "apparent surface". At least 50% of the "apparent surface" of each lamp or reflector must be visible from any point within the relevant angles.



**Figure 2**

**Vertical Angles of Visibility**

Front Position Lamps and Indicators (including Side Repeaters)

'a' = less than 750mm above ground level.

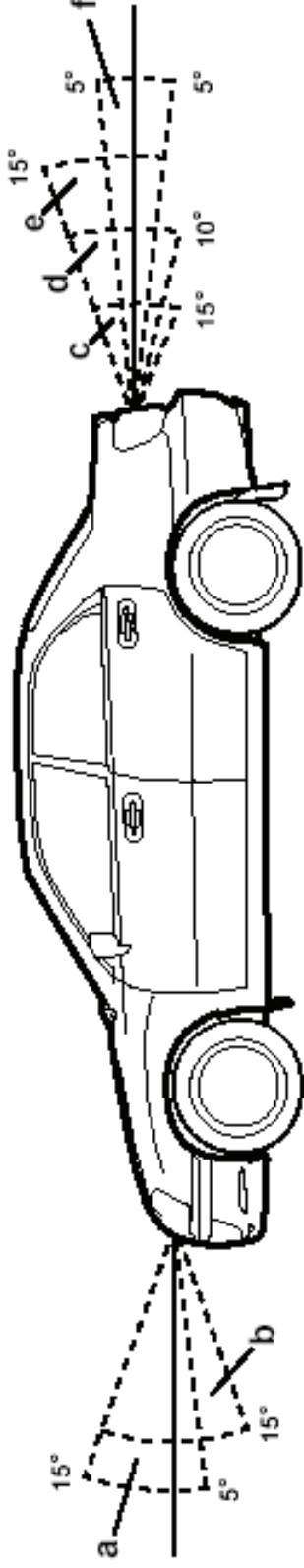
'b' = 750mm or more above ground level.

'c' = Rear position lamps and Stop lamps 1500mm or more above ground level. Indicators and Rear reflectors 750mm or more above ground level.

'd' = Rear position lamps and Stop lamps less than 1500mm above ground level.

'e' = Rear position lamps, Stop lamps, Indicators and Rear reflectors less than 750mm above ground level.

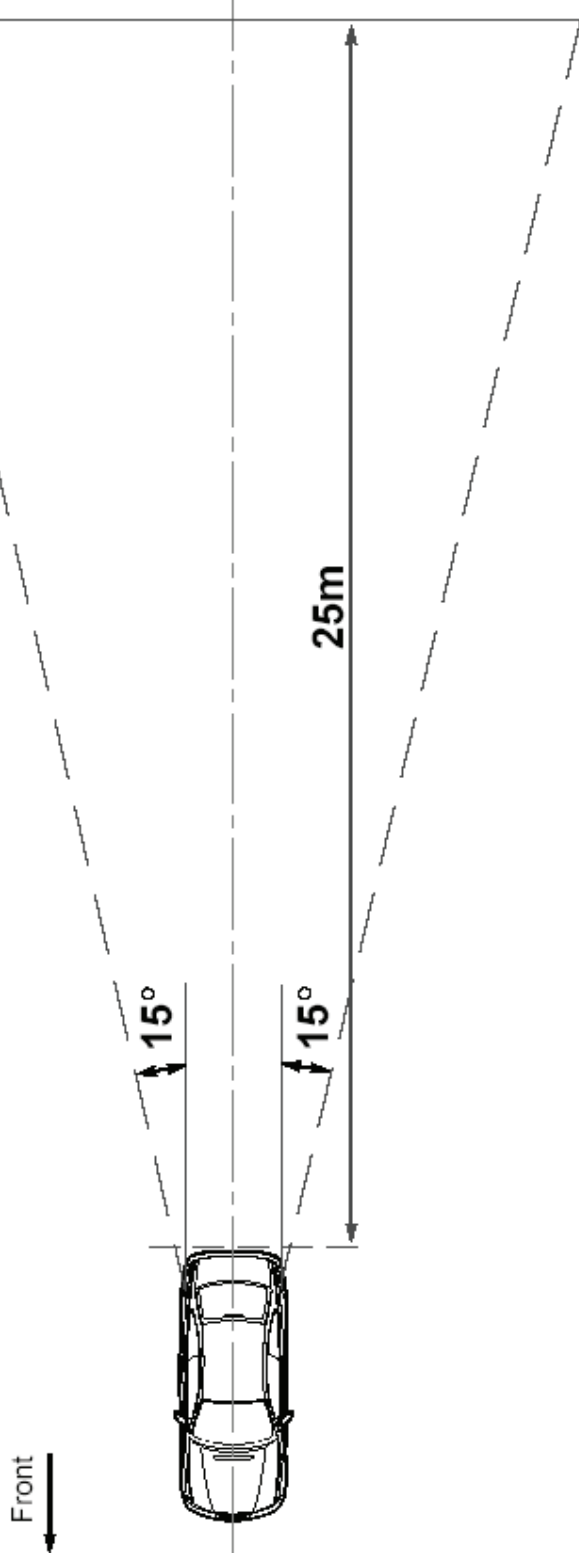
'f' = Rear fog lamps.



Each lamp and reflector must be positioned such as to provide an "apparent surface" At least 50% of the "apparent surface" of each lamp or reflector must be visible from any point within the relevant angles shown

**Figure 3**

“To the rear” of the vehicle means “in an area the sides of which are at an angle of 15 degrees out from the extreme outer edge of the vehicle, (starting from the rear corner) and extending up to **25m** from the rear of the vehicle (measured along the vehicle longitudinal).



**NOTE:** 15 degrees at 5m distance = 1330mm 15 degrees at 10m distance = 2670mm

No light other than a red light (with the exception of amber light from a direction indicator, white light from a work lamp, reversing lamp, or a registration plate lamp or yellow light from a registration plate lamp) is permitted to be visible in this area.

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