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HEADLAMP AIM

APPLICATION

The headlamp aim criteria is applicable to all dipped beam headlamps.

PROCEDURE AND STANDARDS

TYPE OF HEADLAMP

The aim of headlamps must be checked on main or dipped beam according to their type.

The method of inspection involves the use of beam checking equipment with a collecting lens.

MASKS OR CONVERTER KITS

Right hand dip headlamps can be temporarily altered for use in the UK by fitting masks or converter kits which remove the beam ‘kick-up’ to the right.

A headlamp altered in this way is not a reason for rejection, if

a. The headlamp aim is not rejected for the reasons listed under European ‘E’ beam headlamp (except that the top of the beam image will be a straight line).

b. The light output is not unduly reduced – not usually a problem with commercially produced kits.

c. The mask or converter is securely attached.

DRIVER’S BEAM AIM CONTROLS

Some vehicles may be fitted with an "in-cab" headlamp adjustment device. This may be adjusted to enable both headlamps to meet the criteria, however both headlamps must comply with the requirements with the device set in one position.

The headlamp control in the cab is allowed to be used to align the headlamps without categorising this as a reason for failure.

METHOD OF INSPECTION

To check headlight aim

1. Position the vehicle on the designated headlamp aim standing area.

2. Follow the headlamp tester manufacturer's user manual instructions, and

    a. align the headlamp aim equipment with the longitudinal axis of the vehicle,

    b. align the centre of the collecting lens with the centre of the headlamp under test.

3. With the customer sitting in the driving seat, switch on the headlamps to the beam on which the headlamp is to be checked

4. Determine the appropriate headlamp type and its aim.

    Note:
    Old vehicles (approx pre 1980) headlamps beam image may not conform to either of the types of lamps described in this section or they may not be bright enough to activate the headlamp equipment. Therefore no information should be sent to the PC. In such cases check the alignment of the lights against a vertical surface. Position the vehicle in front of the vertical surface, at a distance of 25feet from the surface the headlamp image should be below 3feet 6inches.

When the examiner identifies the type of headlamp, and selects the appropriate testing program, the beam testing equipment will electronically record the test values and display these for each headlamp. When this information is transferred to the test lane, these test values will be automatically compared with the limit values and the headlamp aim passed or failed.

Note:
An increasing number of modern vehicles are fitted with headlamp systems that require the engine to be idling in order to activate their headlamp alignment system and / or needing the steering in the straight ahead position to align the head lamps. Therefore before any vehicle is refused for incorrect headlamp aim, they should have the headlamp aim checked with the engine idling and the steering in the straight ahead position.

TYPES OF HEADLAMPS

a. European type headlamp (checked on dip beam) – Characteristics:

- this is the most common type of headlamp.

- an asymmetric dipped beam pattern with

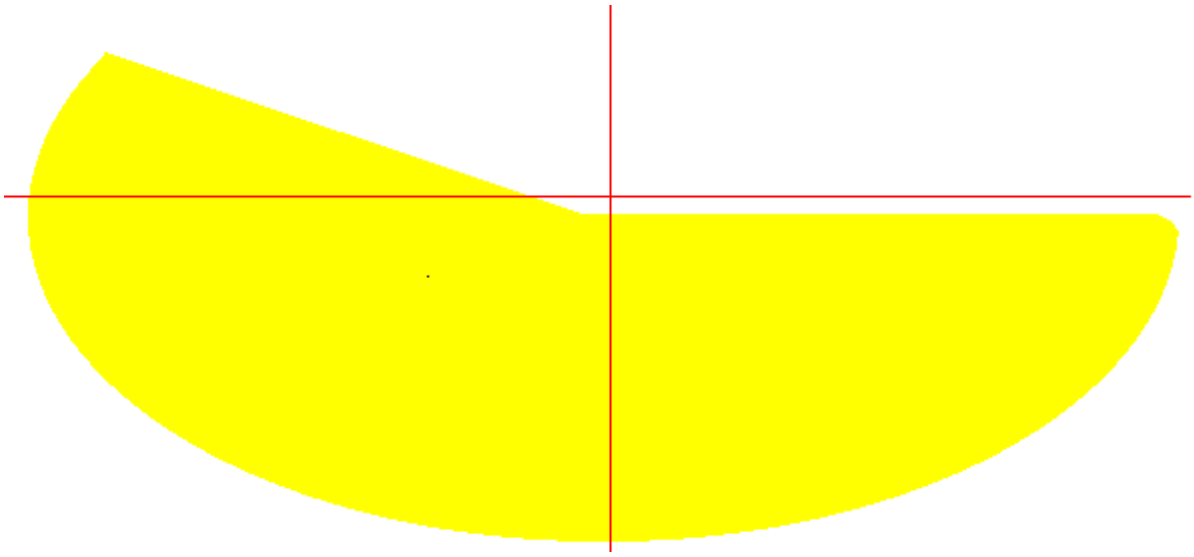
- a distinctive horizontal cut-off on the right, and
- a 15 degree wedge of light above the horizontal (the ‘Kick up’) towards the left.

- a lens with one or more asymmetric stepped patterns moulded in the glass
- a lens may carry
- a European approval mark – a circle containing an ‘E’ and a number, or
- a rectangle containing an ‘e’, and a number.

A. EUROPEAN 'E' BEAM HEADLAMP (CHECKED ON DIPPED BEAM)

A dipped beam is denoted by either:

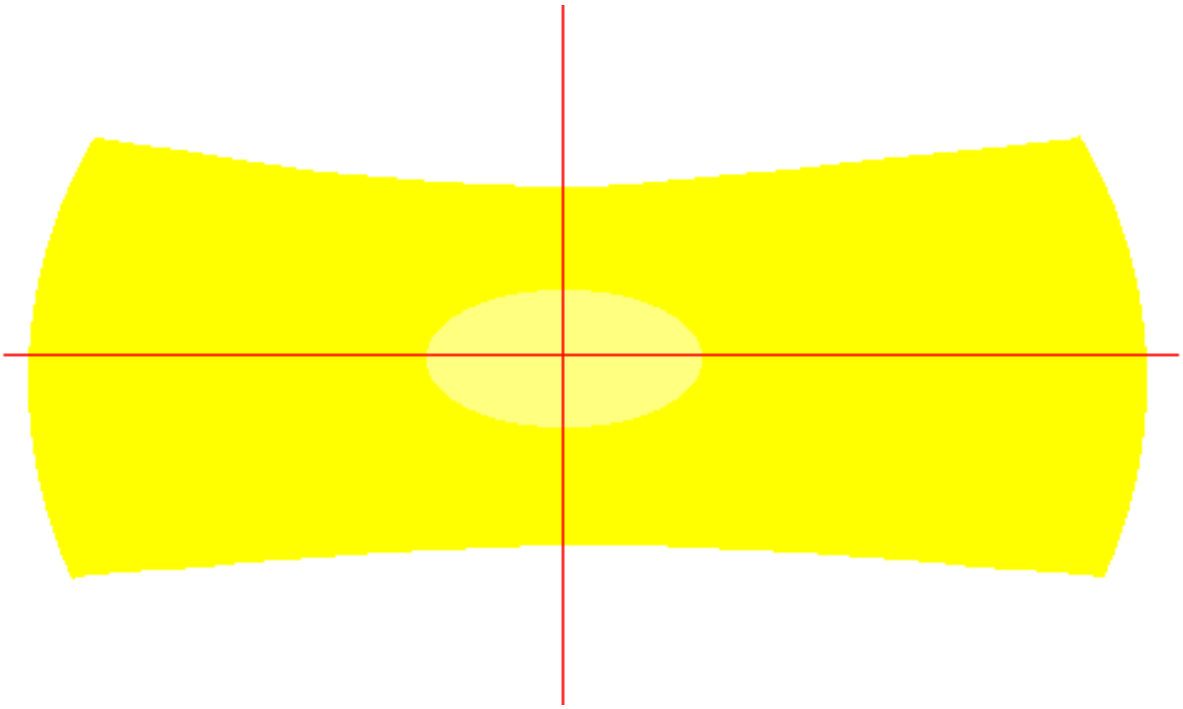
- a capital letter ‘C’ above a capital ‘E’.
- a capital letter ‘C’ above an ‘e’.



B. BRITISH AMERICAN TYPE (CHECKED ON MAIN BEAM) – CHARACTERISTICS:

1. Headlamps tested on main beam have a symmetrical main beam pattern with a central area of maximum intensity (hot spot).

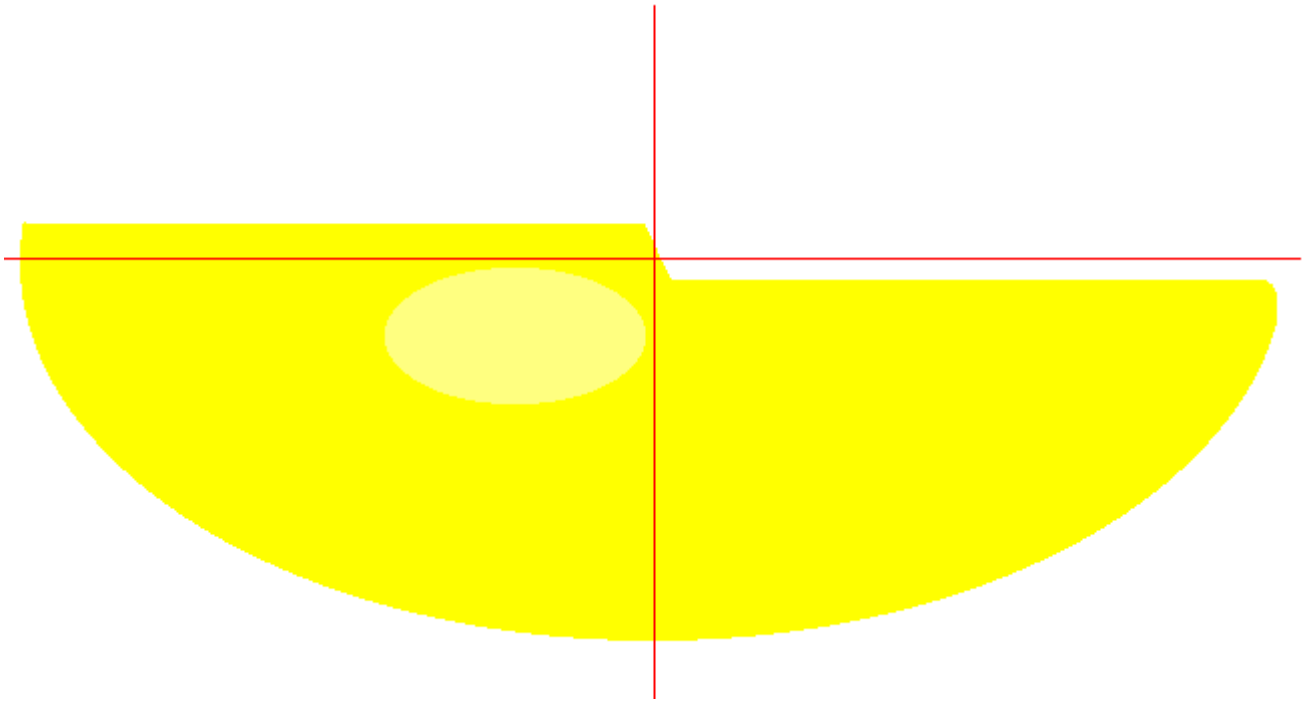
2. This type of lamp generally has a circular lens which may be marked with a figure 1 followed by an arrow indicating the direction of dip.



C. BRITISH AMERICAN TYPE (CHECKED ON DIPPED BEAM) – CHARACTERISTICS

1. An asymmetric dipped beam pattern with an area of high intensity intended to be directed along the nearside of the road.

2. A circular lens marked with the figure 2 which may also have an arrow showing the direction of dip.



REASONS FOR FAILURE

Note: While the reason for failure set out the limit values for each headlamp, these values are pre-programmed into the test equipment, and each headlamp will be passed or failed automatically by the equipment.

A. EUROPEAN (CHECKED ON DIPPED BEAM)

		Deficiency Category
1.	The beam image 'kick-up' is to the offside.	MAJOR
2.	Projected beam image obviously incorrect, e.g. where the headlamp bulb is incorrectly fitted or the reflector is seriously corroded.	MAJOR
3.	For headlamps with centres not more than 850 mm from the ground the beam image horizontal cut-off is not between the horizontal -0.5% and -4% lines	MAJOR
4.	For headlamps with centres more than 850 mm from the ground, the beam image horizontal cut-off is not between the horizontal -1.25% and -4% lines	MAJOR

B. BRITISH AMERICAN (CHECKED ON MAIN BEAM)

		Deficiency Category
1.	The 'hot spot' centre is above the horizontal 0% line.	MAJOR
2.	For headlamps whose centre is not more than 850 mm from the ground the 'hot spot' centre is below the horizontal -2% line.	MAJOR
3.	For headlamps whose centre is more than 850 mm from the ground, the 'hot spot' centre is below the horizontal -2.75% line.	MAJOR
4.	When dipped the brightest part of the image does not move downwards or downwards to the nearside.	MAJOR
5.	The 'hot spot' centre is to the right of the vertical 0% line, or to the left of the vertical 2% line.	MAJOR
6.	Projected beam image obviously incorrect, e.g. where the headlamp bulb is incorrectly fitted or the reflector is seriously corroded.	MAJOR

C. BRITISH AMERICAN (CHECKED ON DIPPED BEAM)

		Deficiency Category
1.	The upper edge of the 'hot spot' **is above** the horizontal 0% line.	MAJOR
2.	The upper edge of the 'hot spot' **is below** the horizontal -4.0% line.	MAJOR
3.	The right hand edge of the 'hot spot' is: **to the right** of the vertical 0% line or **to the left** of the vertical -2% line.	MAJOR
4.	The raised portion of the (beam) image is to the right/offside of the centre line.	MAJOR
5.	Projected beam image obviously incorrect, e.g. where the headlamp bulb is incorrectly fitted or the reflector is seriously corroded.	MAJOR