

## FRENCH PROPOSAL TO R xxx - Annex 9

### PASSING BEAM AIMING PROCEDURE

The requirements laid down in this annex apply to passing beams intended for right-hand traffic; for beams intended for left-hand traffic these specifications apply after being mirrored with respect to the vehicles longitudinal median plane.

#### - 1 General

The "cut-off" line shall consist of a "horizontal part" at the left of VV and a "shoulder line part" at the right of VV, with a "kink" in between, as shown on the sketch hereunder.

#### - 2 Visual aim

When the cutoff is clear enough to materialize the median line so that each specifications of the Annex 3 Table 2 § 2.2 are fulfilled, the passing beam shall be visually aimed without the following measuring procedure.

#### - 3 Alternative aiming procedure

**Step one, vertically :**

Visually aim the basic passing beam so that the substantially flat portion of the cutoff intersects the lines 1.5L, 2.5L and 3.5L under the HH line. Using a receiver cell at a distance of at least 10m with an aperture of at least 1/1 000 of the measuring distance, run three vertical scans at 1.5L, 2.5 L and 3.5 L with steps not exceeding 0.05 angular degree. Each scan shall not expose between 0.5U and 2D more than one position leading to these three equations:

$$d^2 \text{Log } E(1.5L) / dv^2 = 0$$

$$d^2 \text{Log } E(2.5L) / dv^2 = 0$$

$$d^2 \text{Log } E(3.5L) / dv^2 = 0$$

The solutions of these three equations are  $v_{1.5L}$ ,  $v_{2.5L}$  and  $v_{3.5L}$  respectively. Calculate

$$v_k = 0.333 [v_{1.5L} + v_{2.5L} + v_{3.5L}]$$

Between 0.5L and 3.5L, the visual perception of the cutoff shall be fully contained:

under the  $v_k + 0.2^\circ$  line, and  
above the  $v_k - 0.2^\circ$  line.

Then move the lamp so that  $v_k = 0.57D$  .

**Step two, horizontally :**

Rotate the beam 4 degrees to the right. Then moves it gradually leftward. The leftmost position that allows the photometric chart of the relevant passing beam pattern to be fulfilled corresponds to the correct horizontal aim.

In this position, right of the VV line :

- the visual perception of the cutoff shall be fully contained under the  $[(v_k + 0.2^\circ) \text{ tg } 60^\circ]$  line,
- the visual perception of the cutoff of the passing beam(s) other than the town beam shall be fully contained above the  $[(v_k - 0.2^\circ) \text{ tg } 10^\circ]$  line.
- the basic beam cutoff must cross at least once the  $(v_k + 0.57^\circ)$  horizontal line.
- the visual perception of the town beam cutoff shall be fully contained above the  $V = v_k$  line
- the cutoff of a motorway passing beam, if any, must cross at least once the HH line.
- the cutoff of a wet road passing beam with horizontal aiming capability, if any, must cross at least once the HH line.

**Step three: sharpness**

The maximum value of  $|\text{Log } E_v - \text{Log } E_{(v+0.1^\circ)}|$  evaluated at 2.5 deg left of V-V, is called the "sharpness factor". Its maximum shall not be less than 0.13.

