India Comments on Glare given to oncoming vehicles by Motorcycles DRLs at Night

Background

Japan proposed that headlamps of motorcycles equipped with optional daytime running lamps (DRLs) shall automatically be switched ON at night based on "Research on Daytime Running Lamps of Motorcycles (Informal Document No. GRE-75-09)" at the 75th session of GRE.

Japan performed a numerical & experimental analysis to evaluate effects of motorcycle DRL glare to oncoming vehicle driver, depending on its lighting condition at night.
Model formula of Schmidt-Clausen and Bindels , was used to calculate De Boer rating scale was used for this analysis.

$$\text{Glare evaluation rating } W = 5.0 - 2\log\Sigma \left(E/((1 + (L_h/C_{pl})^{0.5})\, \theta^{0.46} C_{poo}) \right)$$
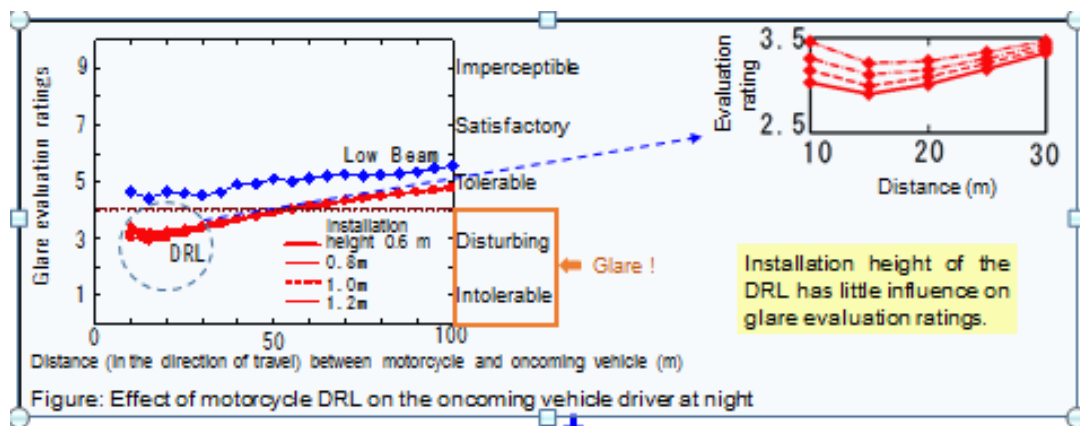
E: Illuminance at driver's eyes (lx)
L_h: Driver's adaptation luminance (cd/m^2)
θ: Angle between driver's line of sight and direction of the lamp
C_{pl}: 4.0×10^{-2} (cd/m^2)
C_{poo}: 3.0×10^{-3} (lx·min$^{-0.46}$)

The following results were presented

Figure: Effect of motorcycle DRL on the oncoming vehicle driver at night

India's Comments

Japan has assumed Driver's adaptation luminance (cd/m^2) to be 0.1 cd/m^2. However, on the illuminated roads, the value is more than 100 cd/m^2 (see attached R-97-36-Safety effects of DRLs, Publication No. FHWA-HRT-08-029).

Change in L_h has significant impact on the result outcomes, to bring out that changes, India has done some numerical analysis keeping road illuminance as 100 and 0.1 cd/m^2 respectively. The values are well within the comfortable limits for Lh = 100 cd/m^2.
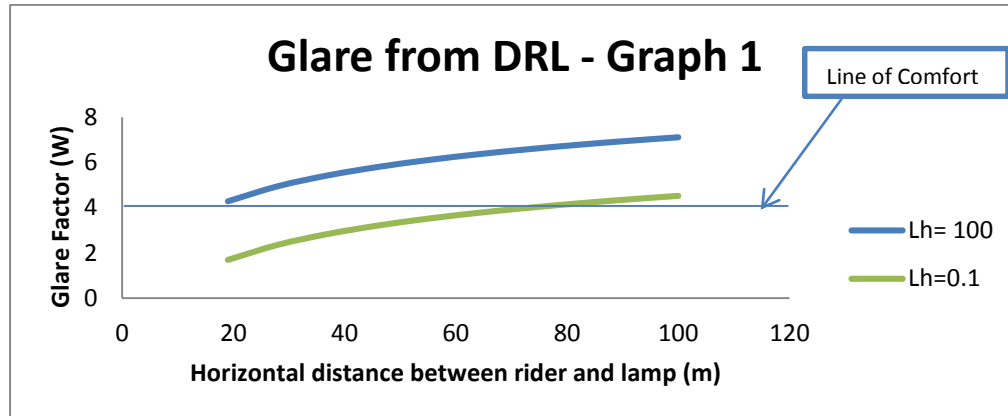
India's Request

In light of Graph 1 above, India requests Japan to clarify how L_h value of 0.1 cd/m^2 is considered? L_h value of 0.1 may be true for the specific country but may not be true for all other countries.

However, to address Japanese concerns of glare from DRL, India suggests a candela cutoff above which DRL would be conceived to be causing glare. The value may be mutually decided upon.