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.

Glare evaluation rating

\[ W = 5.0 - 2 \log E \left( \frac{1}{1 + \left( \frac{L_h}{C_{pl}} \right)^{0.5}} \theta^{0.46} C_{po} \right) \]

- \( E \): Illuminance at driver’s eyes (lx)
- \( L_h \): Driver’s adaptation luminance (cd/m²)
- \( \theta \): Angle between driver’s line of sight and direction of the lamp
- \( C_{pl} \): \( 4.0 \times 10^{-2} \) (cd/m²)
- \( C_{po} \): \( 3.0 \times 10^{-3} \) (lx·min⁻¹⁰.⁴⁶)

The following results were presented

![Effect of motorcycle DRL on the oncoming vehicle driver at night](image)

**India’s Comments**

Japan has assumed Driver’s adaptation luminance (cd/m²) to be 0.1 cd/m². However, on the illuminated roads, the value is more than 100 cd/m² (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 $L_h = 100$ 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.