

Transmitted by the expert from Japan

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agenda item 7 (i))

Research on Daytime Running Lamps of Motorcycles

Expert from JAPAN

Background and Purpose

Permanent lighting of motorcycle headlamps mandatory since 1996



Effective in reducing motorcycle accidents



Instead of headlamps, daytime running lamps (DRLs) are permitted as option since 2009.

Japan conducted the research in order to verify the effects of Motorcycles DRLs on road traffic in terms of glare.

Test Conditions

Items	Conditions
Sky illuminance	Day (10,000 lx) Dusk (2,000 lx, 1,000 lx) Night (0 lx)
Motorcycle lamp	Passing beam (L B) : originally installed Daytime running lamp (D R L)
Motorcycle speed	40, 60, 80 km/h
Eye-point height of test subjects	1,200 mm
Motorcycle lamp height	Centre of L B : 873 mm Centre of D R L : 1,200 mm
Motorcycle lamp light source	L B : Halogen (H4 bulb) D R L : L E D

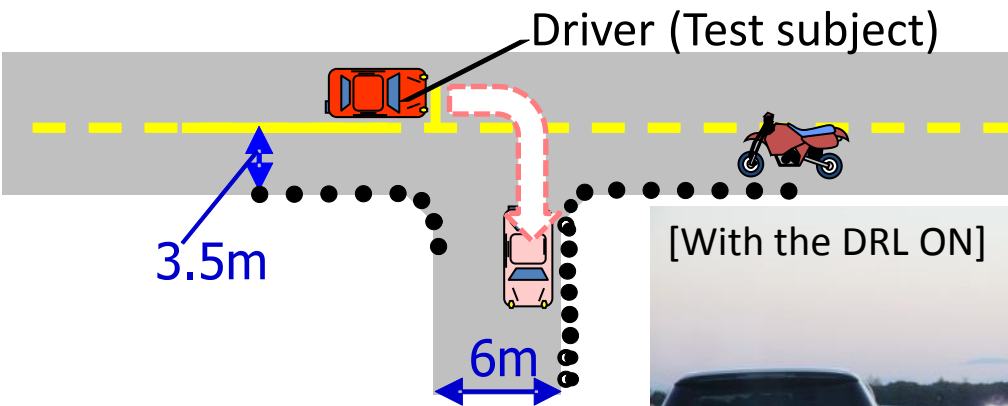


Related requirements about Motorcycle DRL

- *Intensity: not less than 400 cd in the axis of reference
not exceed 1,200 cd in any direction (UN-R87)
- *Height: 250 mm ~ 1,500 mm above the ground (UN-R53)

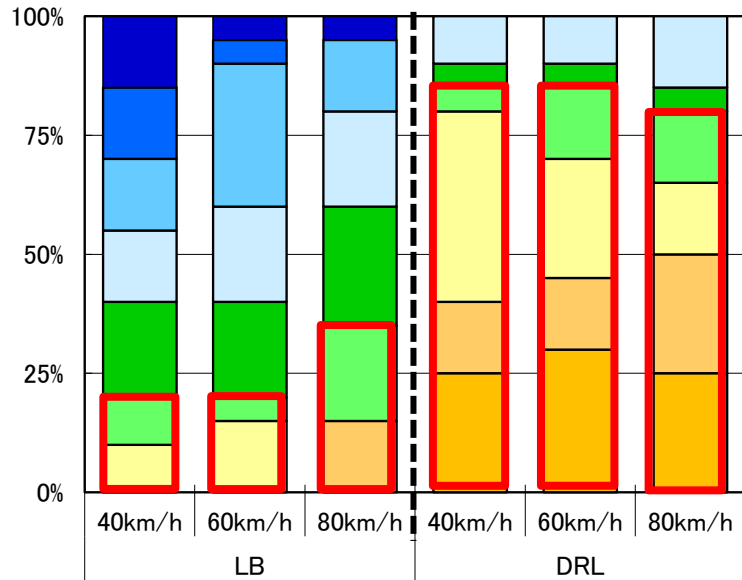
Outline of Research

- * Purpose: to study whether drivers of 4-wheeled vehicles feel glare caused by an oncoming motorcycle with the DRL or low beam ("LB") ON.
- * The situation: a motorcycle is approaching when the 4-wheeled vehicle is turning right.
- * The drivers made sensory evaluations of the glare caused by an oncoming motorcycle with the DRL or LB ON.

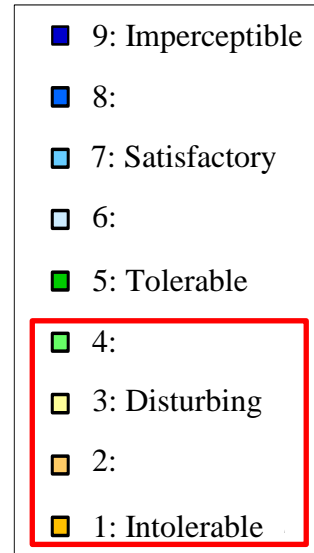
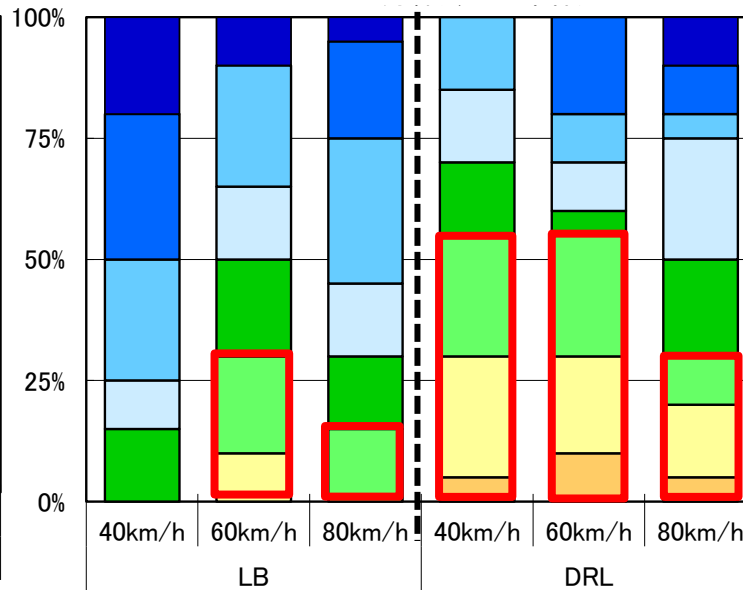


Results: Evaluation of glare by the drivers

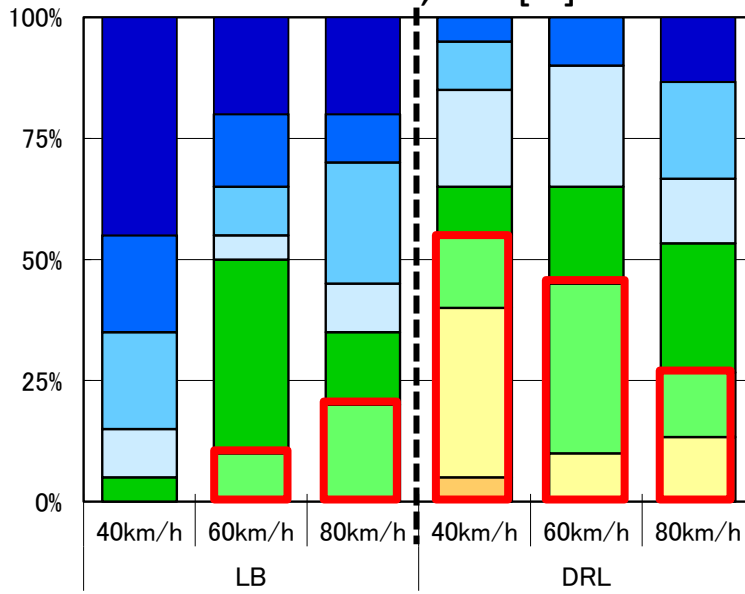
Night : 0 [lx]



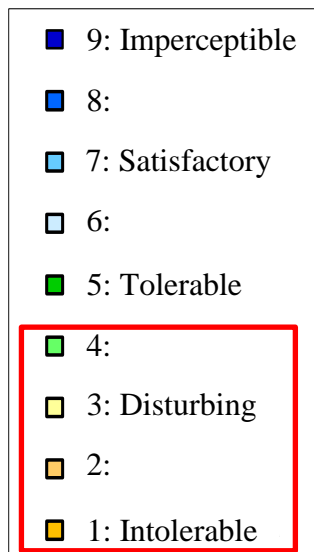
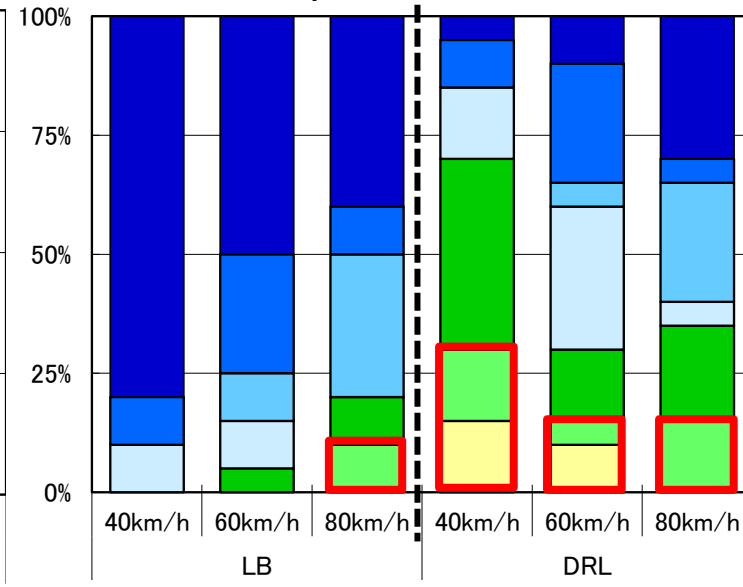
Dusk : 1,000 [lx]



Dusk: 2,000 [lx]



Day : 10,000 [lx]



Summary

* The lower sky illuminance becomes, the more glare was felt.

* About 80% of the test subjects feel glare caused by DRLs at night.



The DRLs of motorcycles shall not be used at night.

Thank you for your attention !