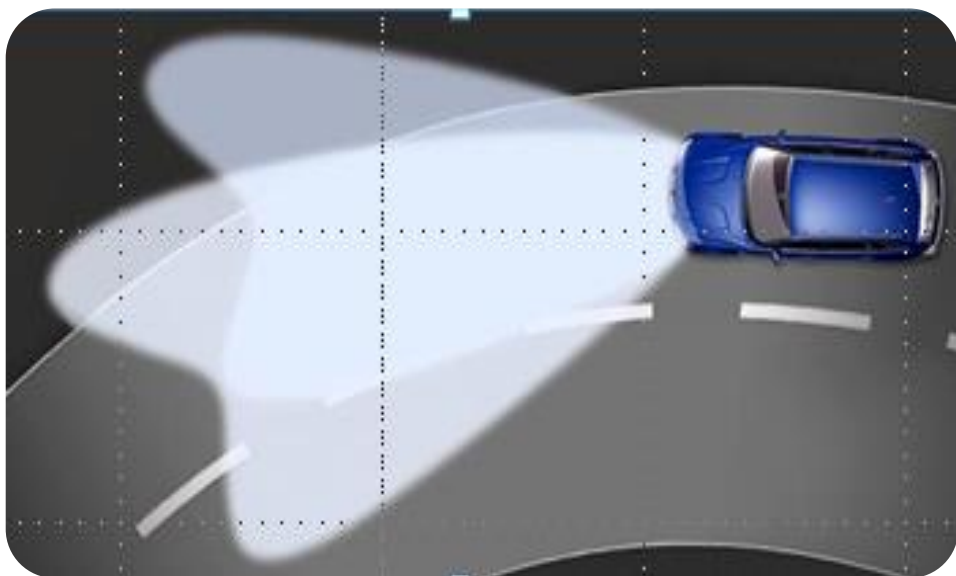


Konstantin Glukhenkiy
Economic Affairs Officer
UNECE Transport Division,
Secretary of GRE and GRBP

LIGHTING AND LIGHT-SIGNALLING INSTALLATION



SAFER AND CLEANER USED VEHICLES

UN Lighting and Light-Signalling Installation Regulations

R48

- Passenger vehicles
- Buses
- Trucks
- Trailers

R53

- Motorcycles

R74

- Mopeds



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Classification of lamps (devices)

Light-signalling

- Rear-registration plate illuminating lamps*
- Direction indicator lamps*
- Position lamps*
- Stop lamps*
- End-outline marker lamps
- Reversing lamps*
- Manoeuvring lamps
- Rear fog lamps*
- Parking lamps
- Daytime running lamps*
- Side marker lamps

- Signals (hazard warning*, emergency stop, rear-end collision alert)

- * - mandatory for passenger vehicles

Road illumination

- Headlamps (main (driving) beam* and dipped (passing) beam*)
- Adaptive front-lighting systems (AFS)
- Front fog lamps
- Cornering lamps

- * - mandatory for passenger vehicles

Retro-reflective

- Retro-reflectors*
- Retro-reflective markings
- Retro-reflective marking plates
- Advance warning triangles

- * - mandatory for passenger vehicles



Approval of installation vs individual lamps

All individual lamps (devices) are regulated in detail by separate UN Regulations.

Only lamps (devices) approved according to the respective device UN Regulations may be installed on vehicles.

Therefore, if a vehicle was approved according to the respective installation UN Regulation (48, 53 or 74), this means that all of its lamps (devices) were also individually approved. Thus, approval according to R48, R53 or R74 spares the need to check individual approvals of the installed lamps (devices).



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Visibilité d'un feu rouge vers l'avant

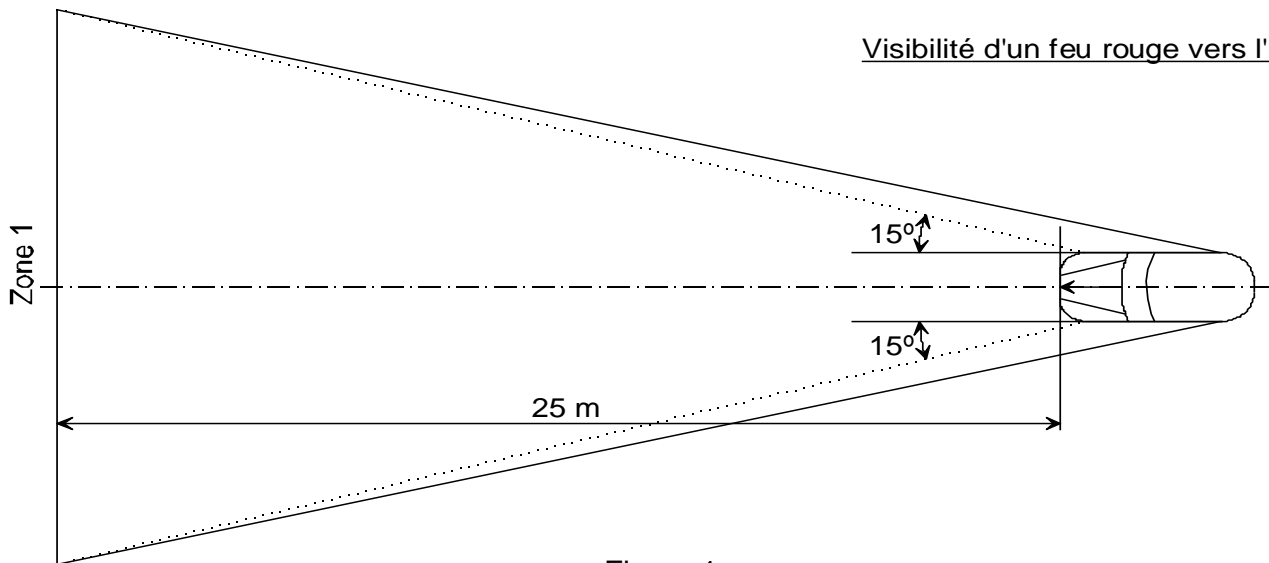


Figure 1

Visibilité d'un feu blanc vers l'arrière

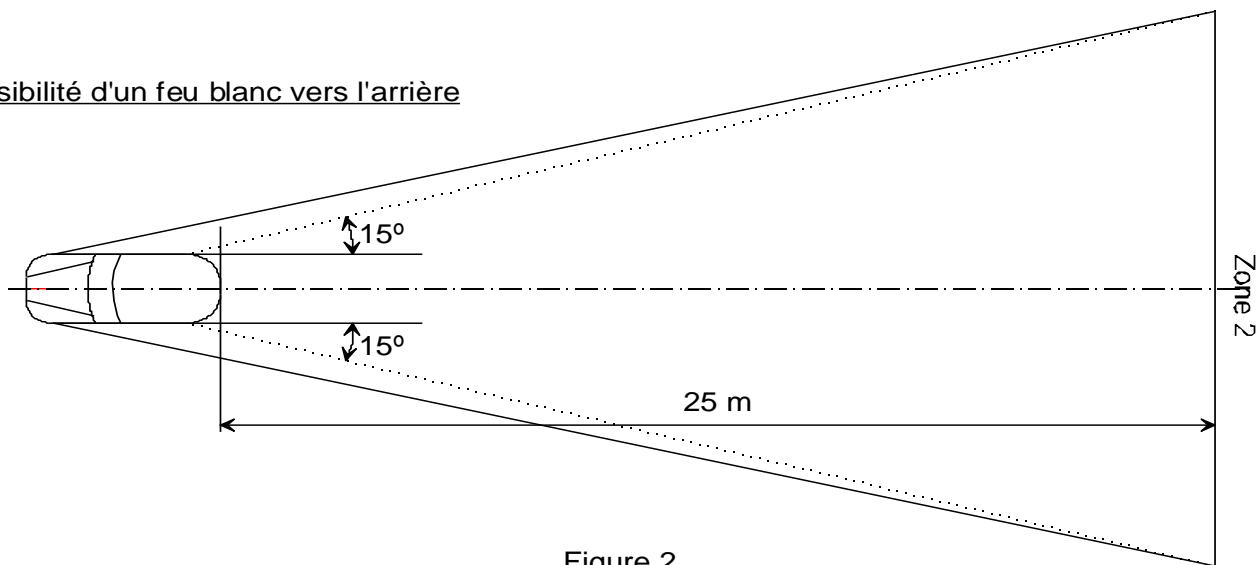


Figure 2

General principles for installation

- No red light should be emitted forward and no white light should be emitted in a rearward direction (except for reversing lamps)



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General principles for installation (cont'd)

- **The lighting devices shall be so fitted that under normal operating conditions it will not be possible for the lamp to be inadvertently maladjusted**
- **The illuminating devices shall be installed such that correct adjustment of their orientation can easily be carried out.**
- **Lamps constituting a pair shall satisfy the same colorimetric requirements and have substantially identical photometric characteristics**
- **Lamps constituting a pair shall be symmetrical to one another in relation to the median longitudinal plane.**

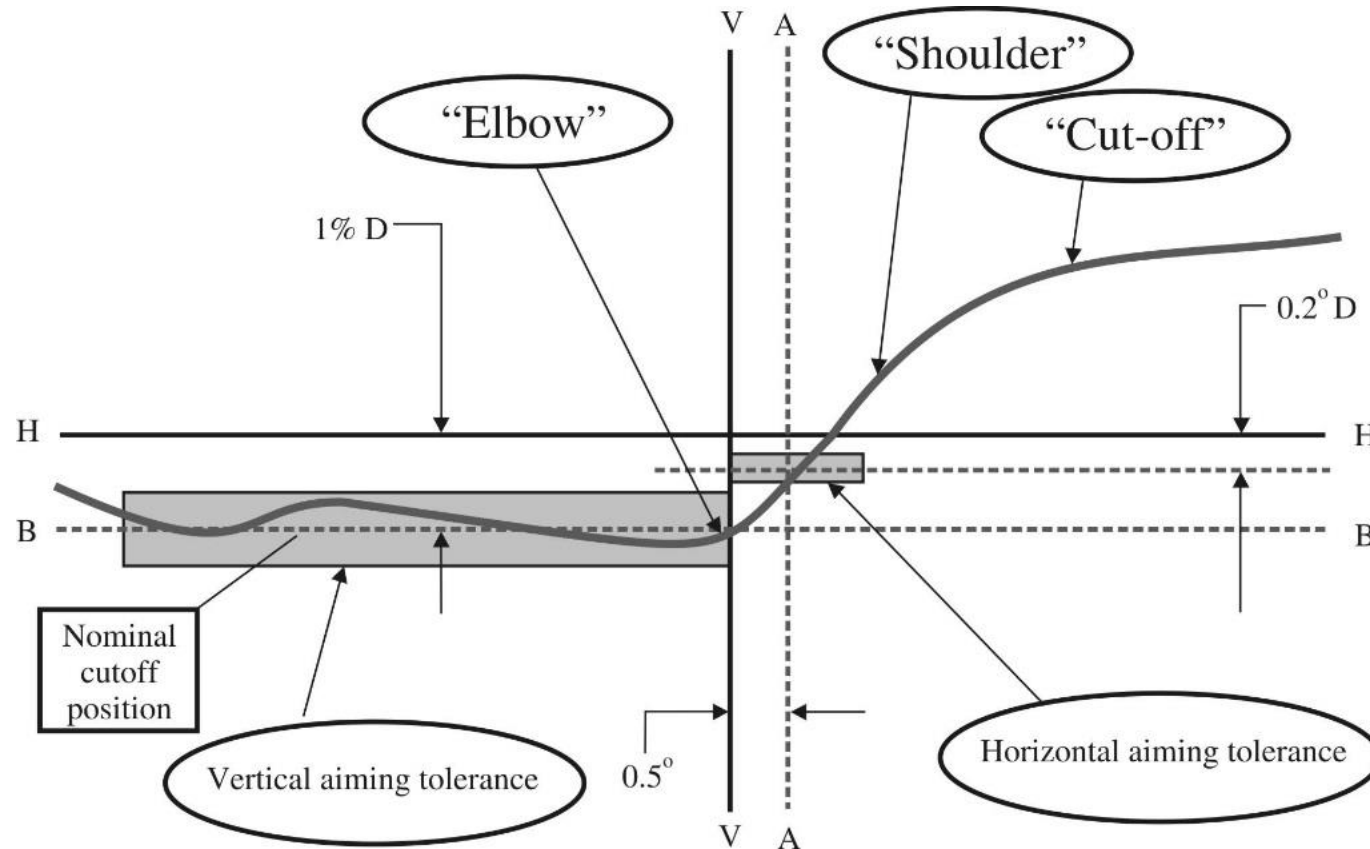
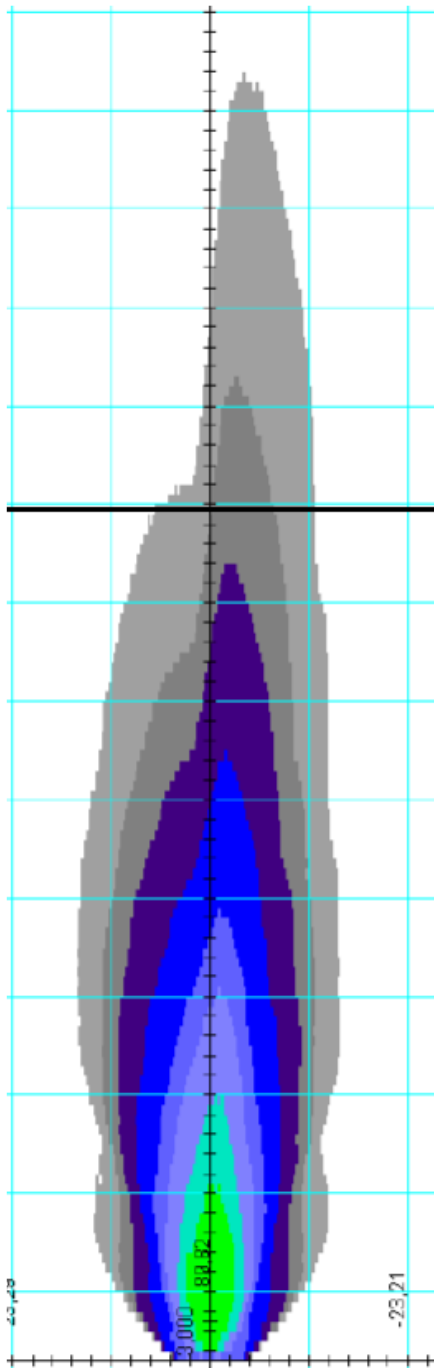


Individual specifications by the installation UN Regulations for each lamp (device)

- **Colour**
- **Presence (mandatory or optional)**
- **Number and types**
- **Arrangements, if any**
- **Position (width, height, etc.)**
- **Geometric visibility (horizontal and vertical angles)**
- **Orientation**
- **Electrical connections**
- **Tell-tale (a visual or auditory signal indicating that a device has been switched on and is operating correctly or not)**
- **Etc.**

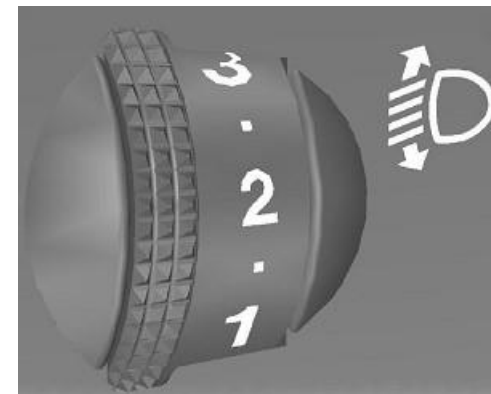
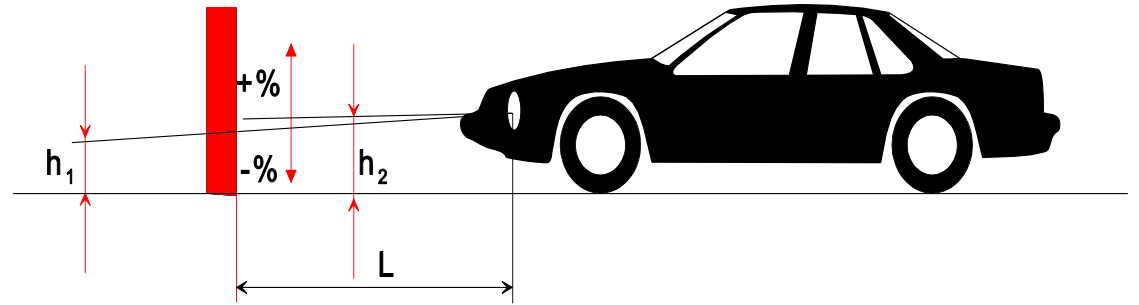
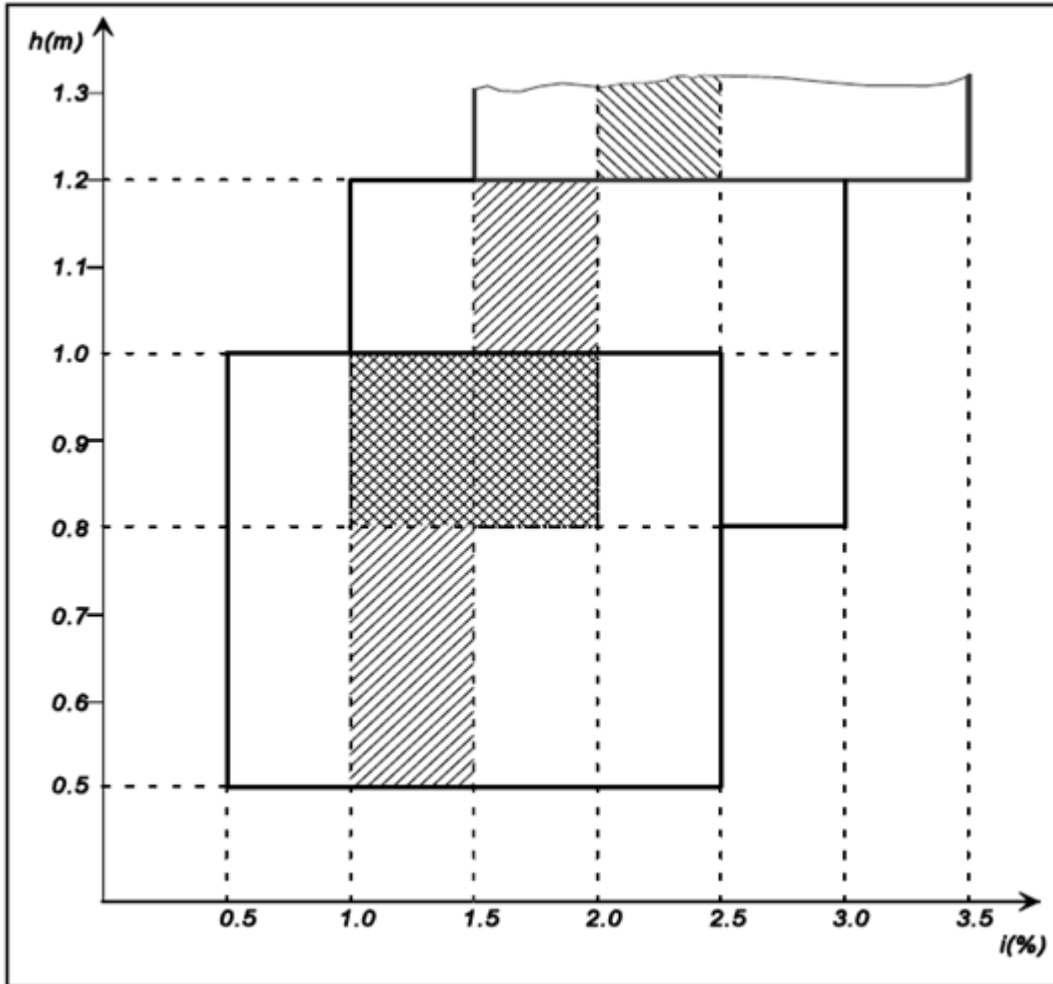


Headlamp passing-beam: illumination vs glare and asymmetrical beam



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Headlamp passing-beam: Initial aiming, automatic and manual levelling



**SAFER AND CLEANER
USED VEHICLES**

Regulations on tyres

Requirements	R30/GTR16	R54/GTR16	R75
Markings	X	X	X
Speed symbols	X	X	X
Load-capacity indices	X	X	X
Size designations and dimensions	X	X	X
Tread wear indicators	X		
Load/speed (endurance) test	X	X	X
Dynamic growth test			X
Wet grip, rolling resistance	R117/GTR16	R117/GTR16	



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**THANK YOU
FOR YOUR ATTENTION**

UNECE Sustainable Transport Division

<http://www.unece.org/trans>

konstantin.glukhenkiy@un.org



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