

Vehicle Lighting and Light Signalling Regulations

EN

Since 2005, new road traffic regulations have been in force in the EU for the entire vehicle lighting system. Among other things, all luminaires of the same kind must be mounted with equal strength, equal height and symmetrical to the middle when mounted in pairs. However, if a vehicle was built before 2005, the exception is that the lamps were already installed before the regulation came into effect.

If a lamp is approved according to the appropriate ECE regulation for a specific use on a vehicle it does not mean that it can be used for every purpose on every position. It may only be used as the lamp for which it is approved.

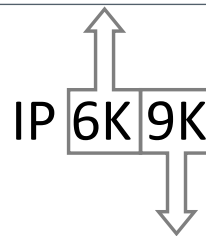
ECE R1	Vehicle headlamps
ECE R3	Reflectors
ECE R4	Rear license plate lighting
ECE R6	Indicator front, tail and on the sides
ECE R7	Position-, tail-, brake- and width marker lamp
ECE R10	Electromagnetic compatibility (EMC)
ECE R19	Fog lamps
ECE R23	Reverse lamps
ECE R38	Rear fog lights
ECE R48	Installation of lighting and light-signaling devices
ECE R65	Warning lights
ECE R77	Parking lights, front and tail
ECE R87	Daytime running lights (DRL)
ECE R91	Side markers
ECE R98	Xenon headlamps
ECE R112	Halogen and LED headlamps
ECE R119	Cornering lamps
ECE R123	Advanced Focus System, head light (AFS)
ECE R128	LED light sources
ECE R148	This Regulation combines the provisions of individual UN Regulations Nos. 4, 6, 7, 23, 38, 77, 87 and 91 into a single Regulation, and is the outcome of the World Forum for Harmonization of Vehicle Regulations (WP.29) decision to simplify the lighting and light-signalling regulations based on the initial proposal by the European Union and Japan.
ECE R150	This Regulation combines the provisions of individual UN Regulations Nos. 3, 27, 69, 70 and 104 into a single UN Regulation on uniform provisions concerning the approval of retro-reflective devices and markings for power-driven vehicles and their trailers.
SAE J595	Requirements for use on authorized emergency, maintenance, and service vehicles
CISPR 25	Radio disturbance characteristics for the protection of receivers used on board vehicles, boats, and on devices – Limits and methods of measurement. It is divided into classes from 1 to 5. Class 5 fulfils the highest standards.

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IP-Classification

The IP classification (e.g. IP6K9K), specifies an internationally valid value according to ISO 20653 and DIN EN 60529, which defines the degree of protection provided by mechanical casings and electrical enclosures against intrusion, dust, accidental contact, and water.

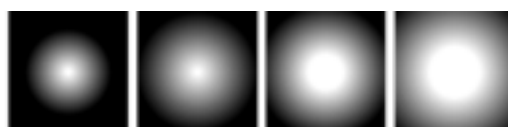
First digit		Description	
ISO 20653	DIN EN 60529	Protection against foreign objects	Protection against contact
0		No protection	No protection
1		Protection against solid foreign objects with diameter ≥ 50 mm	Protection against access with back of hand
2		Protection against solid foreign objects with a diameter ≥ 12.5 mm	Protection against access with a finger
3		Protection against solid foreign objects with a diameter ≥ 2.5 mm	Protection against access with a tool
4		Protection against solid foreign objects with diameter ≥ 1.0 mm	Protection against access with a wire
5K	5	Protection against dust in harmful quantities	Complete protection against contact
6K	6	Dust-tight	Complete protection against contact



Second digit		Description
ISO 20653	DIN EN 60529	Water Protection Classification
0		No protection
1		Protection against dripping water
2		Protection against falling dripping water if the enclosure is inclined up to 15°
3		Protection against falling spray water up to 60° from vertical
4K	4	Protection against splashing water from all sides
5		Protection against water jets (nozzle) from any angle
6K	6	Protection against strong jets of water
7		Protection against temporary submersion
8		Protection against permanent submersion. Unless otherwise specified, protection is provided up to a water depth of 1 metre.
9K	9	Protection against water during high-pressure/steam jet cleaning

Lumen

Lumen (lm) is the standardized unit for the luminous flux and allows conclusions to be drawn about the brightness of a lamp. The luminous flux indicates how much light a light source emits in all directions. The higher the lumen value, the more light a lamp emits per unit of time.



4 lm 49 lm 120 lm 255 lm

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