



BC Lighting Requirements Summary

BC Ministry of Transportation and Infrastructure
Commercial Vehicle Safety and Enforcement
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Division 4 of the Motor Vehicle Act Regulations (MVAR) sets out the requirements for lamps on vehicles. This summary document covers **Division 4.02 - General lighting requirements, 4.04 General maintenance, 4.09 Auxiliary driving lamps, 4.11 Fog lamps and 4.25 Off-road lamps** and includes each of the aforementioned divisions of the regulation along with tips and examples. This is intended as a guide only, review current legislation for verification of requirements. For the full list and more information please refer to the Motor Vehicle Act Regulations (BC) and Motor Vehicle Safety Act (Canada) (MVSA) at:

MVAR http://bclaws.ca/civix/document/id/complete/statreg/26_58_00

MVSA <http://laws-lois.justice.gc.ca/eng/acts/M-10.01/index.html>

All lamps must be authorized by Division 4 and be compliant for highway use (see markings list below). If a lamp is not approved they would be considered an Off-Road Lamp. Division 4 definition of an "**off-road lamp**" means a lamp designed for any use other than those specified in Division 4 of the regulations and must be concealed with an opaque cover while on the highway. Acceptable lamps in Division 4 will usually have a specified number permitted, colour, mounting, operation and aiming described.

The following is a list of SAE markings that shall appear on lamps, bulbs and reflectors:

North American SAE Lighting and Signalling Function Markings:

A Reflex reflectors
A2 Wide angle reflex reflectors
C Motorcycle auxiliary "passing" lamp
D Motorcycle turn signal lamp
E Side turn signals for vehicles at least 12m long
E2 Side turn signals for vehicles shorter than 12m
F Front fog lamp
F2 Rear fog lamp (fog taillamp)
G Cargo lamp
H Sealed beam headlamp
HG Xenon HID (High Intensity Discharge) headlamp
HL LED (Light Emitting Diode) headlamp
HR Halogen replaceable-bulb headlamp
I Turn signal, front
I3 Turn signal, front, spaced from 75mm to 99mm from low beam headlamp
I4 Turn signal, front, spaced from 60mm to 74mm from low beam headlamp
I5 Turn signal, front, spaced less than 60mm from low beam headlamp
I6 Turn signal, rear (also front for vehicles at least 2m wide)
I7 Turn signal, front, spaced less than 100mm from the headlamp, for vehicles at least 2m wide
K Front cornering lamp
K2 Rear cornering lamp

L License plate lamp
M Motorcycle headlamp
N Moped headlamp
O Spot lamp
P Parking lamp
P2 Clearance, Sidemarker, and Identification lamp
P3 Clearance, Sidemarker and Identification lamp for vehicles at least 2m wide
PC Combination clearance and sidemarker lamp (trucks)
PC2 Combination clearance and sidemarker lamp for vehicles at least 2m wide
R Reversing (backup) lamp
S Stop (brake) lamp
S2 Stop (brake) lamp for vehicles at least 2m wide
T Tail (rear position) lamp
T2 Tail (rear position) lamp for vehicles at least 2m wide
U Supplemental high-mounted combination brake/turn lamp
U2 Supplemental high-mounted brake lamp for vehicles at least 2m wide
U3 Center high-mounted brake lamp (CHMSL) for passenger cars
W2 Warning lamp for school buses
Y Auxiliary high beam ("driving") lamp
Y2 Daytime Running Lamp
Z Auxiliary low beam lamp

DOT and European "E" approvals are accepted

Signal Lamp Markings, Front and Rear:

A Front position lamp (colloquially: "city light" or "standing lamp"; "side light" in British English, "parking lamp" in American English)
AR Reversing (back-up) Lamp
F or **B** Rear fog Lamp
A Retro-reflector
R Rear position (tail) Lamp
S1 Stop (brake) lamp
S3 Centre High Mount Stop Lamp (3rd stop light)
1 Front turn indicator for use more than 40 mm away from low beam headlamp axis
1a Front turn indicator for use more than 20 mm and less than 40 mm away from low beam headlamp axis
1b Front turn indicator for use less than 20 mm away from low beam headlamp axis
2a Rear turn indicator
5 Side turn indicator (repeater)
SM1 Side marker lamp, high performance (large vehicles)
SM2 Side marker lamp, low performance (passenger vehicles)
RL Daytime running lamp

Forward Illumination Lamp Function Markings:

B Front fog lamp
F3 Front fog lamp (to updated & increased performance requirements)
C Low (dip) beam headlamp, tungsten filament
R High (main) beam headlamp or driving lamp, tungsten filament
CR Low and high (dip and main) beam headlamp, Class-A (usually tungsten filament)
C/R Low and high (dip and main) beam headlamp with low and high beams not to be operated simultaneously, Class-A (usually tungsten filament)
HC Low (dip) beam headlamp, Class-B (usually halogen or LED)
HR High (main) beam headlamp or driving lamp, Class-B (usually halogen or LED)
HCR Low and high (dip and main) beam headlamp, Class-B (usually halogen or LED)
HC/R Low and high (dip and main) beam headlamp with low and high beams not to be operated simultaneously, Class-B (usually halogen or LED)
DC Low (dip) beam headlamp, gas discharge (HID, "Xenon")
DR High (main) beam headlamp or driving lamp, gas discharge (HID, "Xenon")
DCR Low and high (dip and main) beam headlamp, gas discharge (HID, "Xenon")
DC/R Low and high (dip and main) beam headlamp with low and high beams not to be operated simultaneously, gas discharge (HID, "Xenon")
A Front position lamp (colloquially "city light" or "standing lamp"; called "side light" in British English and "parking lamp" in American English),
RL Daytime running lamp
PL Plastic lens (may occur with any of above markings)

4.02 General lighting requirements [en. B.C. Reg. 476/98, s. 2; am. B.C. Reg. 135/2003, s. 1.]

- (1) A vehicle on a highway must only be equipped with and use lamps, reflectors or other illuminating devices authorized by this Division or authorized in writing by the director.
- (2) A vehicle on a highway must be equipped with lamps equivalent to those provided by the original manufacturer in accordance with the requirements that applied under the *Motor Vehicle Safety Act* (Canada), or a predecessor to that Act, at the time of vehicle manufacture.
- (3) All lamps, lamp bulbs and reflectors required or permitted by this Division must comply with
 - (a) the approved standards established by the *Motor Vehicle Safety Act* (Canada) and the applicable SAE standards,
 - (b) the conditions of use described in this Division, and
 - (c) the requirements of Table 1 of the Schedule to this Division.
- (4) The function of 2 or more lamps or reflectors may be combined if each function meets the following requirements:
 - (a) no turn signal lamp may be combined optically with a stop lamp unless the stop lamp is extinguished when the turn signal is flashing;
 - (b) a clearance lamp must not be combined optically with a tail-lamp or identification lamp.
- (5) The director may exempt vehicles or classes of vehicles from the requirements of this section.

It is unlawful to put High Intensity Discharge bulbs in a housing marked with any other marking than HG or European equivalent for headlamps. There are many kits available, but if the housing is not marked to accommodate an HID light source, it is illegal and must contain a Halogen filament bulb. Housings designed for Halogen filament bulbs are not designed for the output of HID light sources (through reflection/refraction and aiming of light source); hence output is excessively bright.

Example of an HID kit:



It is unlawful to put Light Emitting Diode light sources in a housing marked with any other marking than HL or European equivalent for headlamps. Housings designed for Halogen filament bulbs are not designed for the output of LED light sources (through reflection/refraction and aiming of light source); hence output is excessively bright.

Example of an LED kit:



4.04 General maintenance [en. B.C. Reg. 476/98, s. 2.]

- (1) Lighting devices required by this Division must be maintained in good working order.
- (2) Lamps and reflectors required by this Division
 - (a) must be securely mounted on the vehicle,
 - (b) must not have any cracked, broken, missing or incorrectly installed lenses, and a lamp must not have bent or broken rims that allow water to enter the lamp, and
 - (c) must not be shielded, covered or obscured by any part of the vehicle or load or by dirt or other material.

Any tinting or shielding of any required lamp is illegal.

Tinted tail lamp example:



Shielded tail lamp example:



4.09 Auxiliary driving lamps (SAE Y or ECE equivalent) [en. B.C. Reg. 476/98, s. 2.]

- (1) A motor vehicle may be equipped with 2 auxiliary driving lamps, mounted on the front of the vehicle at a height of not less than 40 cm and not more than 1.06 m, that are capable of displaying only white light.
- (2) An auxiliary driving lamp must be directed so that the high intensity portion of the beam is, at a distance of 8 m from the lamp, at least 12 cm below the height of the lamp and, at a distance of 25 m from the lamp, not higher than 1.06 m from the road surface.
- (3) An auxiliary driving lamp must operate so that it is illuminated only when the upper beam of a multiple beam headlamp is illuminated.

4.11 Fog lamps (SAE F or ECE equivalent) [en. B.C. Reg. 476/98, s. 2.]

- (1) A motor vehicle may be equipped with 2 fog lamps, mounted on the front of the vehicle below the headlamps, that are capable of displaying only white or amber light.
- (2) Each fog lamp must be
 - (a) mounted not more than 30 cm below the headlamps, and
 - (b) adjusted and aimed so that, at a distance of 8 m from the lamp, the centre of the beam is at least 10 cm below the height of the fog lamp.
- (3) The fog lamp wiring and switch must permit simultaneous operation of the parking lamps, tail lamps, licence plate lamp and, if required, clearance lamps.
- (4) The operator of a vehicle may use fog lamps instead of headlamps when atmospheric conditions make the use of headlamps disadvantageous.

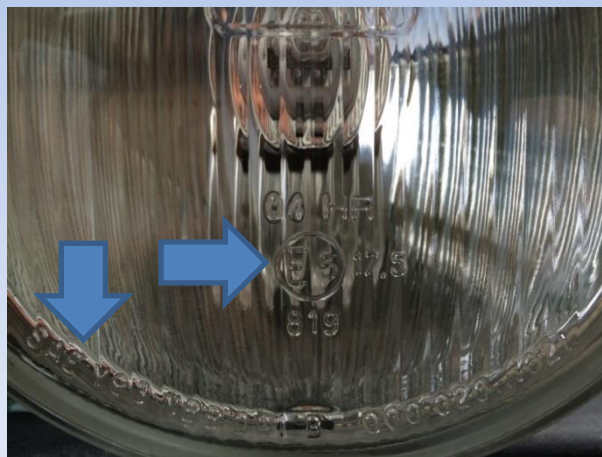
4.25 Off-road lamps [en. B.C. Reg. 476/98, s. 2.]

Despite section 4.04 (2) (c), a vehicle equipped with off-road lamps when on a highway must have the off-road lamps concealed with opaque covers.

Example of an off-road lamp; no SAE approval marking:



Example of a lamp that carries the SAE approval for an auxiliary high beam “driving” lamp as well as a European approval:



All lamps not SAE approved or permitted by the MVAR are considered off-road lamps and must be concealed with opaque covers while on the highway.