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EXTERIOR LIGHTING (G2342557)

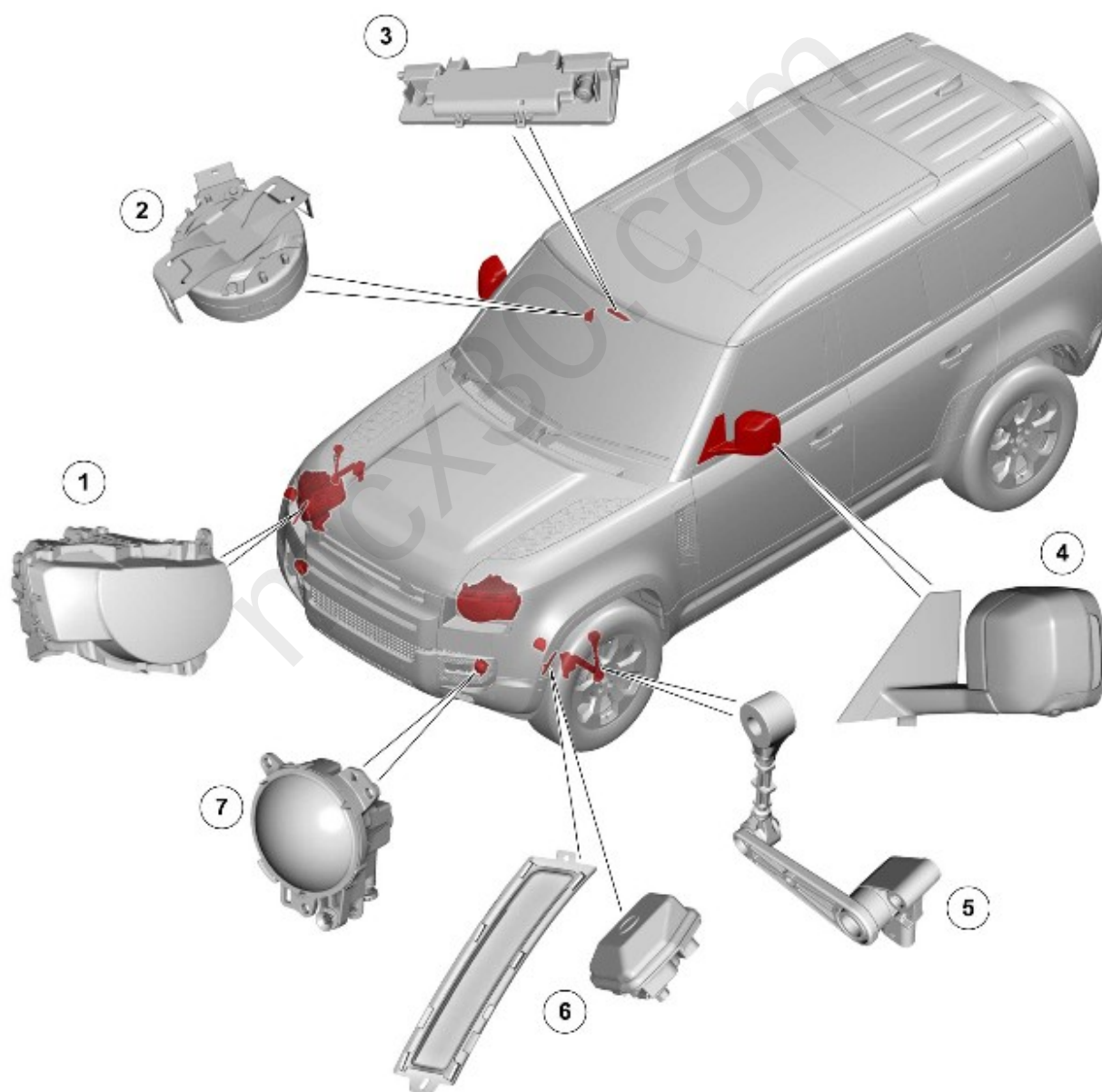
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COMPONENT LOCATION

COMPONENT LOCATION - 1 OF 4 - FRONT LAMPS

 NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.



ITEM	DESCRIPTION
1	Headlamp assembly (quantity 2)
2	Rain/light sensor
3	Image Processing Module (IPMA)
4	Door mirror - Side repeater lamp (quantity 2)
5	Front height sensor (quantity 2)
6	Front side marker lamp/Reflector (quantity 2) (North American Specification (NAS) only)
7	Front fog lamp (quantity 2) (if equipped)

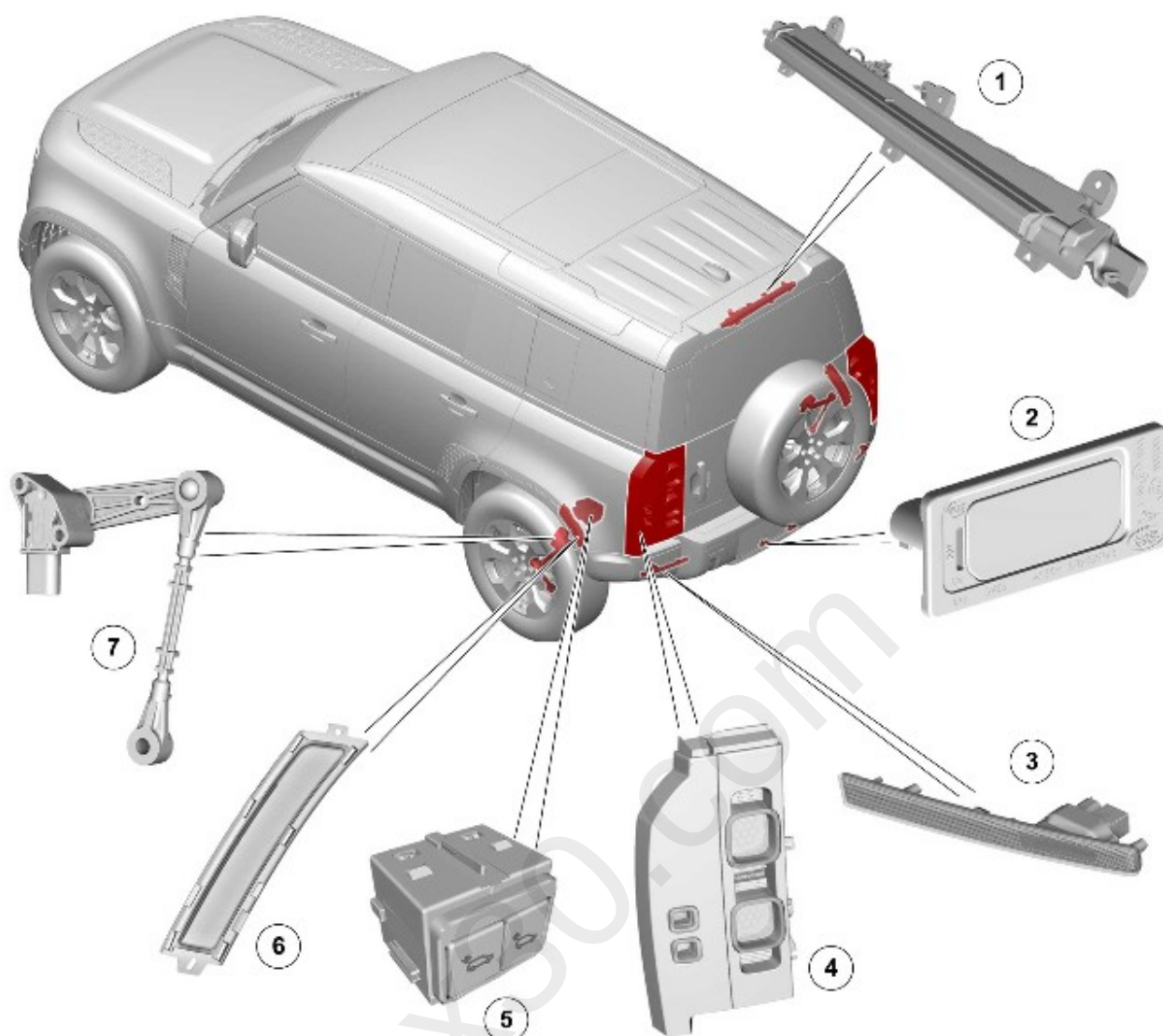
COMPONENT LOCATION – 2 OF 4 – REAR LAMPS



NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.

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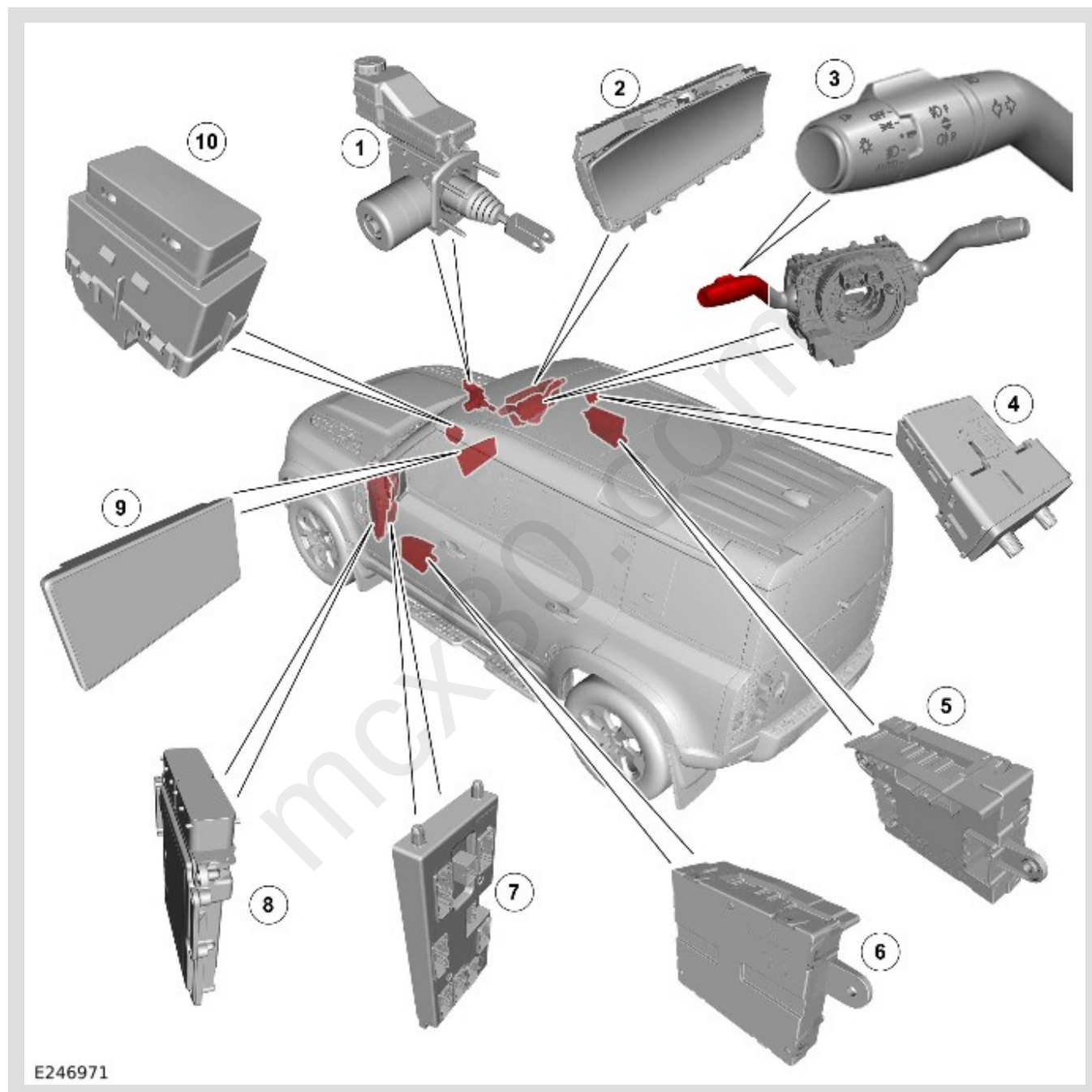


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ITEM	DESCRIPTION
1	High Mounted Stop Lamp (HMSL)
2	License Plate Lamp (quantity 2)
3	Rear fog lamp/Reflector (quantity 2)
4	Tail lamp assembly (quantity 2)
5	Rear height adjust switch
6	Rear side marker lamp/Reflector (quantity 2) (NAS only)
7	Rear height sensor (quantity 2)

 NOTES:

- Right Hand Drive (RHD) vehicle is shown, Left Hand Drive (LHD) vehicle is similar.
- Vehicle with 5 doors is shown, vehicle with 3 doors is similar.



ITEM	DESCRIPTION
1	Integrated Power Brake
2	Instrument Panel Cluster (IPC)
3	Left steering column switch

ITEM	DESCRIPTION
4	IPC dimmer (if equipped)
5	Driver Door Control Module (DDM)
6	Passenger Door Control Module (PDM)
7	Body Control Module (BCM)/ Gateway Control Module (GWM)
8	Powertrain Control Module (PCM)
9	Touch Screen (FCDIM)
10	Hazard warning lamp switch

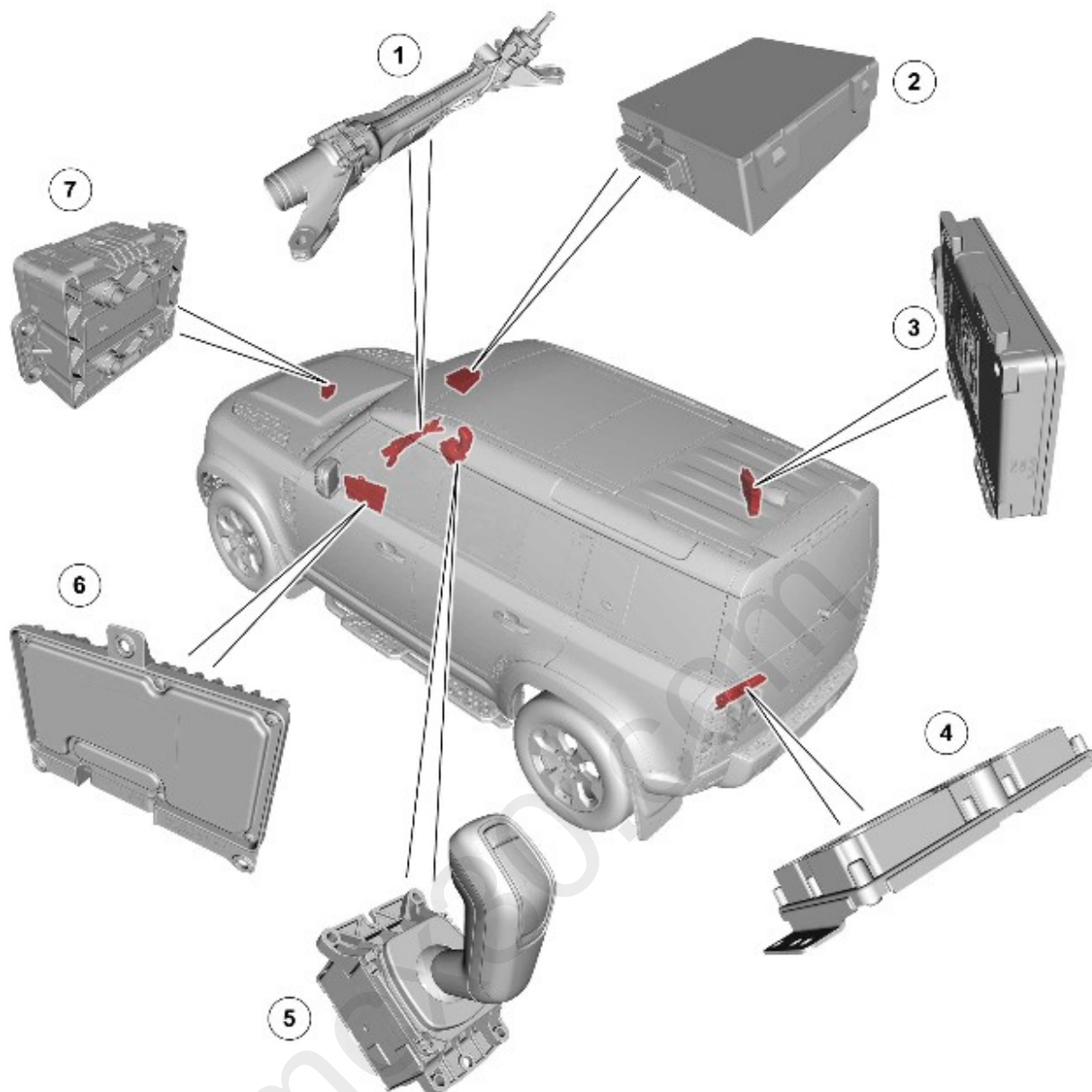
COMPONENT LOCATION – 4 OF 4



NOTES:

- RHD vehicle is shown, LHD vehicle is similar.
- Vehicle with 5 doors is shown, vehicle with 3 doors is similar.

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E247462

ITEM	DESCRIPTION
1	Power Steering Control Module (PSCM)
2	Tire Pressure Monitoring System Control Module (TPM)
3	Blindspot Monitoring Control Module (SODR)
4	Rear Differential Control Module (RDCM)
5	Transmission Control Switch (TCS)
6	Driver Assistance Domain Controller (DADC)
7	Cruise Control Module (CCM)

EXTERIOR LIGHTING

The exterior lighting consists of:

- The 2 headlamp assemblies, each contains:
 - Low beam
 - High beam
 - Turn Signal Indicator
 - Daytime Running Lamps (DRLs)
 - Front Position Lamp (ROW)/Parking Lamp (NAS)
- The 2 tail lamp assemblies, each contains:
 - Turn Signal Indicator
 - Rear Position Lamp (ROW)/Tail Lamp (NAS)
 - Stop lamp
 - Reverse Lamp.
- Front side marker lamp/Reflector (quantity 2) (NAS only)
- Rear side marker lamp/Reflector (quantity 2) (NAS only)
- The front fog lamp (quantity 2) (if equipped)
- The rear fog lamp/Reflector (quantity 2)
- HMSL
- The front and rear height sensors
- License Plate Lamp (quantity 2)
- The IPMA
- The rain/light sensor.

The BCM/ GWM is connected to the High Speed (HS) Controller Area Network (CAN) system buses and the FlexRay. The BCM/ GWM contains a microprocessor which controls, monitors and evaluates the functions.

Driver lighting selections are made using the:

- Left steering column switch
- The hazard warning lamp switch
- The IPC dimmer (if equipped)

- The FCDIM.

Depending on model and market specification, the lighting system may have:

- Auto High Beam, operates the headlamp automatically switched between low and high beam in response to signals from the IPMA or.
- Adaptive Driving Beam, evaluates the road scene ahead of the vehicle, automatically adapts the light distribution according to the position of the preceding, oncoming traffic. The Adaptive Driving Beam also uses the IPMA.
- Adaptive Front lighting System (AFS) modifies the beam patterns based on driving conditions and speed.

DESCRIPTION

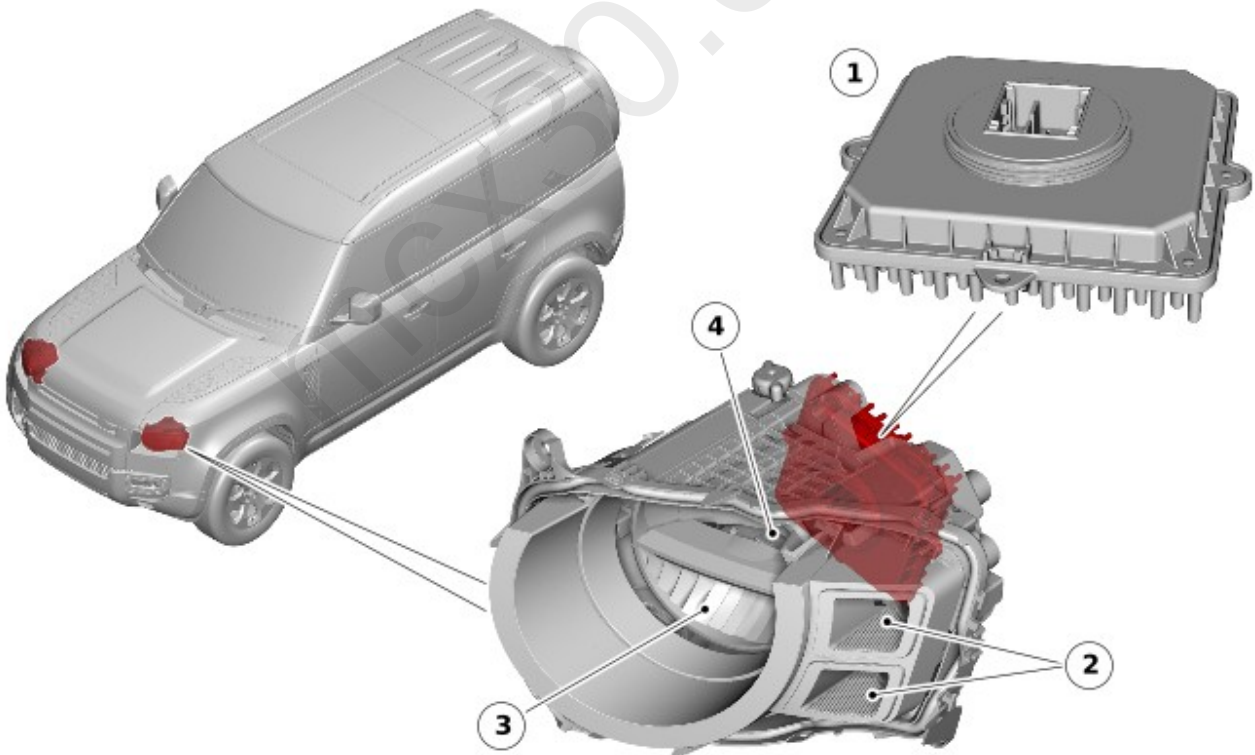
LIGHT EMITTING DIODES HEADLAMPS WITH DAYTIME RUNNING LAMP



NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.

Left installation is shown, right installation is similar.



E246972

ITEM	DESCRIPTION
1	Headlamp Control Module A (HCM)

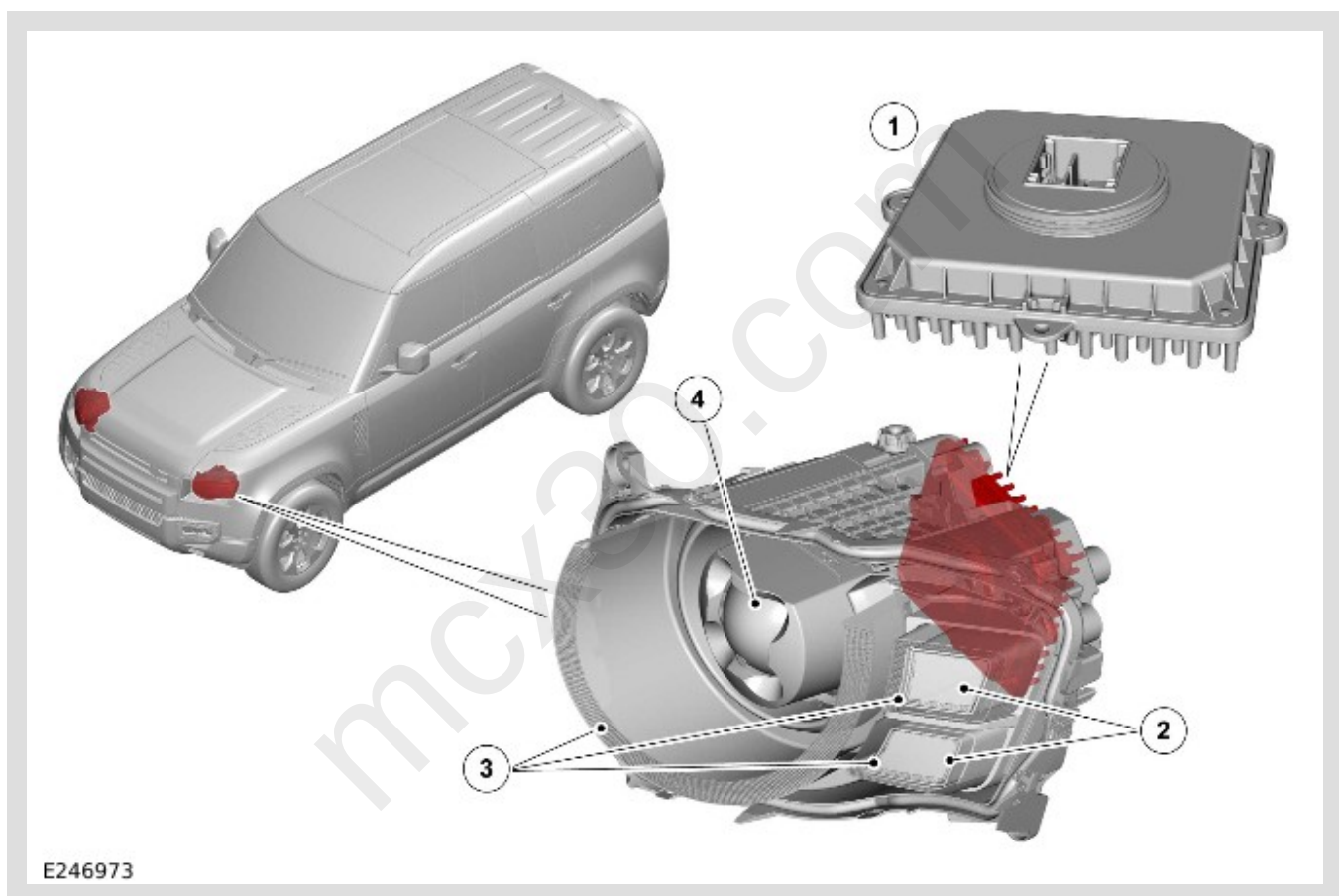
ITEM	DESCRIPTION
2	Turn signal indicator, DRLs and Parking Lamp
3	High beam
4	Low beam

PREMIUM LIGHT EMITTING DIODES HEADLAMP WITH DAYTIME RUNNING LAMP

NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.

Left installation is shown, right installation is similar.



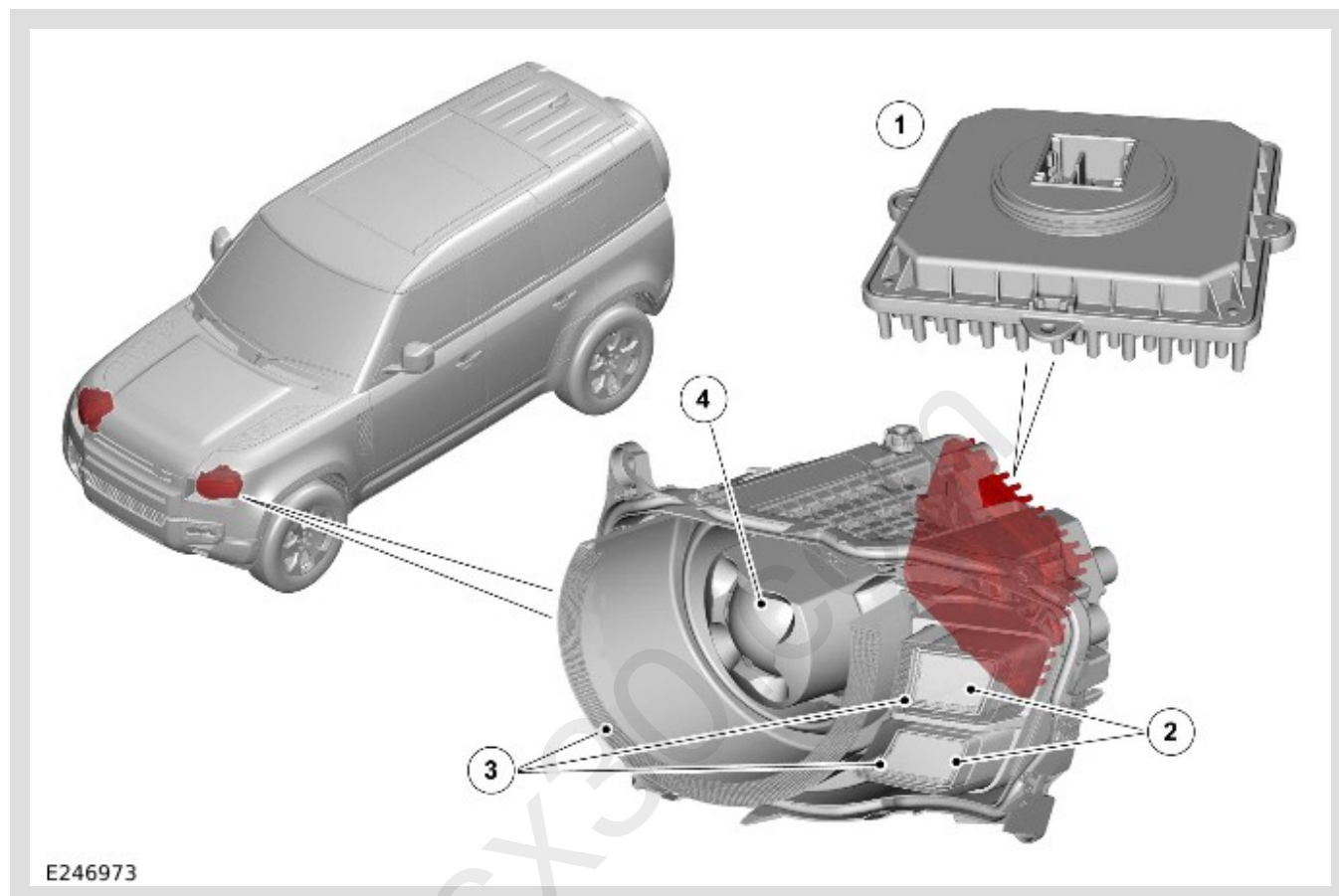
ITEM	DESCRIPTION
1	HCM
2	Turn signal indicator
3	DRLs and Front Position Lamps (ROW)/DRLs and Parking Lamp (NAS)
4	Premium Light module - Low Beam and High Beam

MATRIX LIGHT EMITTING DIODES HEADLAMP WITH SIGNATURE DAYTIME RUNNING LAMP – EXCEPT NAS

NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.

Left installation is shown, right installation is similar.



ITEM	DESCRIPTION
1	HCM
2	Turn signal indicator
3	DRLs and Front Position Lamps (ROW)
4	Matrix Light module - Low Beam and High Beam

HEADLAMP ASSEMBLY

There are 3 headlamp variants available depending on model specification:

- The Light Emitting Diodes (LEDs) headlamp with DRLs
- Premium LEDs headlamp with signature DRLs
- Matrix LEDs headlamp with signature DRLs (Except NAS).

LOW BEAM

The low beam is controlled manually by the user or automatically by the rain/light sensor. The low beam illuminates when:

- In Power Mode 6 (ignition ON) or higher and the rain/light sensor requests low beam.
- Headlamp delay timeout has been enabled.
- The headlamp button is pressed on the Remote Function Actuator (RFA).
- Remote vehicle location is enabled.

During the activation of high beam, the low beam indicator does not operate in the IPC. Because the low beam and high beam indicator shares the same location in the IPC, and the high beam indicator takes priority. The low beam indicator does not extinguish during high beam flash operation.

HIGH BEAM

The high beam is operated by pushing the left steering column switch towards the instrument panel. The movement interacts with Auto High Beam or Adaptive driving beam.

HEADLAMP LEVELING

Headlamp leveling provides for the adjustment of the vertical aim of the headlamps. The function is to minimize glare to other road users when the vehicle attitude changes due to vehicle loading.

There are 3 types of headlamp leveling system available dependent on the type of headlamp installed to the vehicle:

- Manual headlamp levelling (except NAS)
- Static automatic headlamp levelling
- Dynamic automatic headlamp levelling.

ADAPTIVE FRONT LIGHTING SYSTEM – IF EQUIPPED

AFS modifies the Low beam light distribution.

AUTO HIGH BEAM AND ADAPTIVE DRIVING BEAM

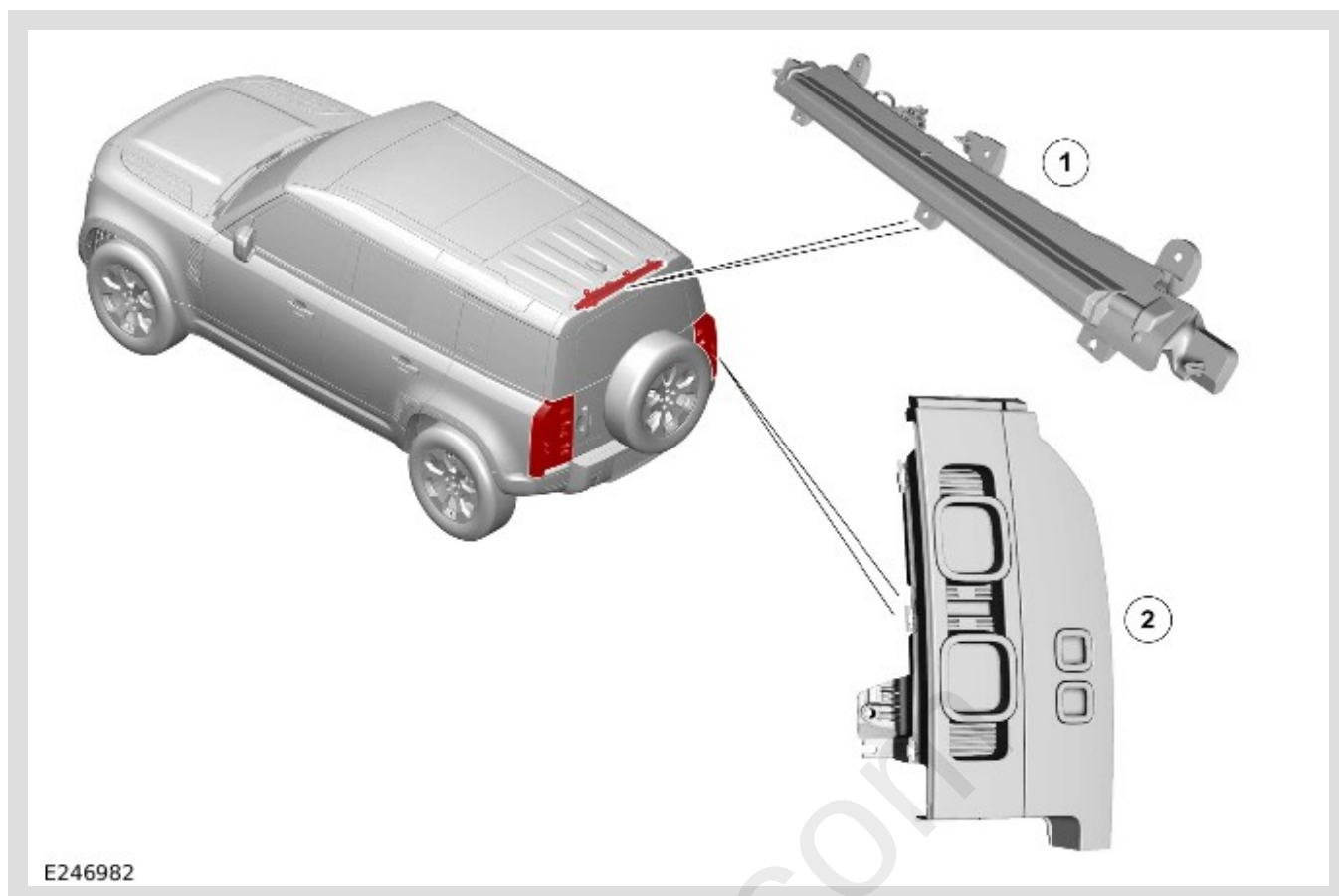
Auto High Beam or Adaptive driving beam is a system designed to improve safety. They reduce driver workload during low-light driving conditions by automatically controlling the vehicle's high beam. Adaptive Driving Beam or Auto High Beam is only installed as a part of AFS.

TAIL LAMP ASSEMBLY AND HIGH MOUNTED STOP LAMP



NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.



ITEM	DESCRIPTION
1	HMSL
2	Tail lamp assembly (quantity 2)

Each tail lamp assembly is installed to the body of the vehicle.

The tail lamp assembly has the following functions:

- Turn Signal Indicator
- Rear Position Lamp (ROW)/Tail Lamp (NAS)
- Stop lamp
- Reverse Lamp (ROW)/Back Up Lamp (NAS).

STOP LAMP AND HIGH MOUNTED STOP LAMP

The stop lamp and HMSL illuminate when the following conditions occur:

- In Power Mode 6 (ignition ON) or higher.
- The foot brake pedal is pressed.
- The Hill Descent Control (HDC) is active.

- The Collision Avoidance Driver Support (CADS) is active.
- The Collision Mitigation by Braking (CMBB) is active.
- The Electric Park Brake (EPB) is active at speed greater than 3 km/h (1.8mph).

For additional information, refer to:Braking Control System (206-11, Description and Operation).

REVERSE LAMP (ROW)/BACK UP LAMP (NAS)

The Reverse Lamp (ROW)/Back Up Lamp (NAS) is active when in Power Mode 6 (ignition ON). The Reverse Lamp (ROW)/Back Up Lamp (NAS) illuminate when in REVERSE.

REAR AND FRONT POSITION LAMP (ROW)/TAIL LAMP AND PARKING LAMP (NAS)

The Rear and Front Position Lamp (ROW)/Tail Lamp and Parking Lamp (NAS) operate by selecting side lamp or headlamp on the left steering column switch. The Rear and Front Position Lamp (ROW)/Tail Lamp and Parking Lamp (NAS) are also operated by the rain/light sensor when in Power Mode 6 (ignition ON) or greater.

The Rear and Front Position Lamp (ROW)/Tail Lamp and Parking Lamp (NAS) are switched OFF when in Power Mode 4 - Accessory (vehicle unlocked and Smart Key present) or lower.

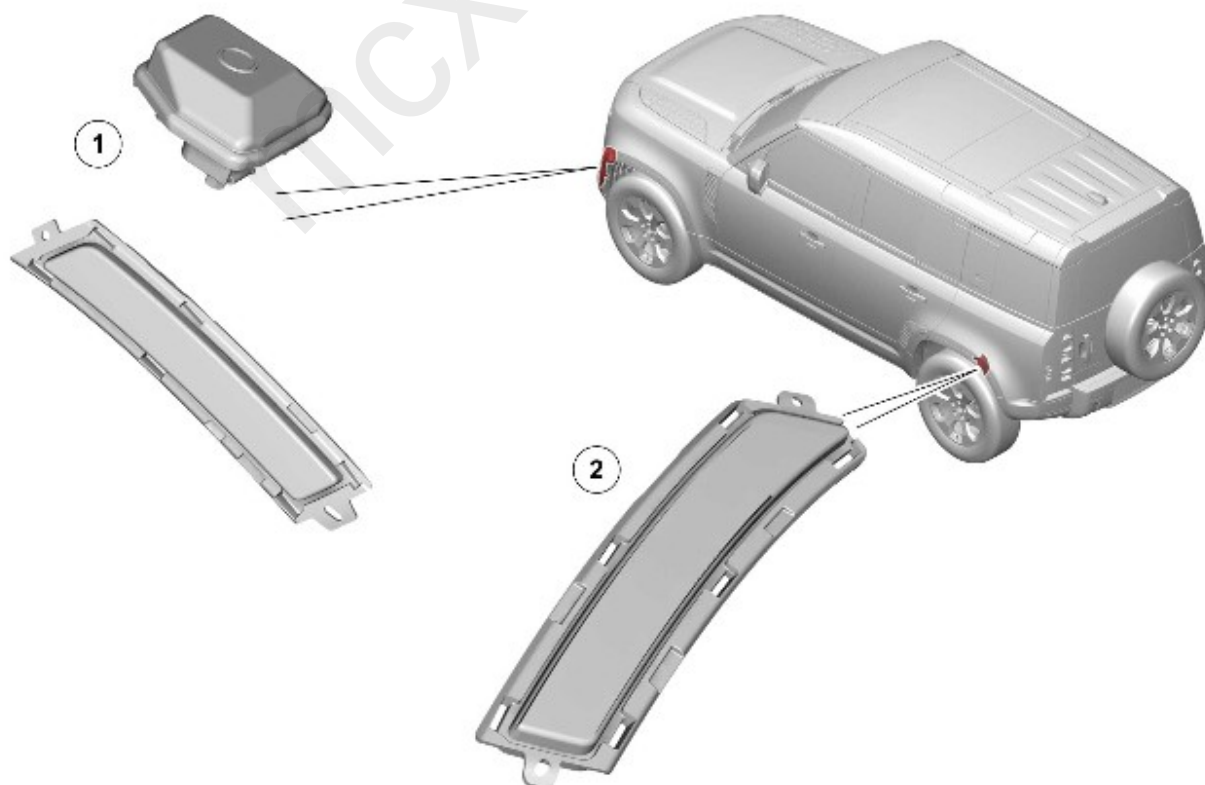
FRONT AND REAR SIDE MARKER LAMP/REFLECTOR (NAS ONLY)



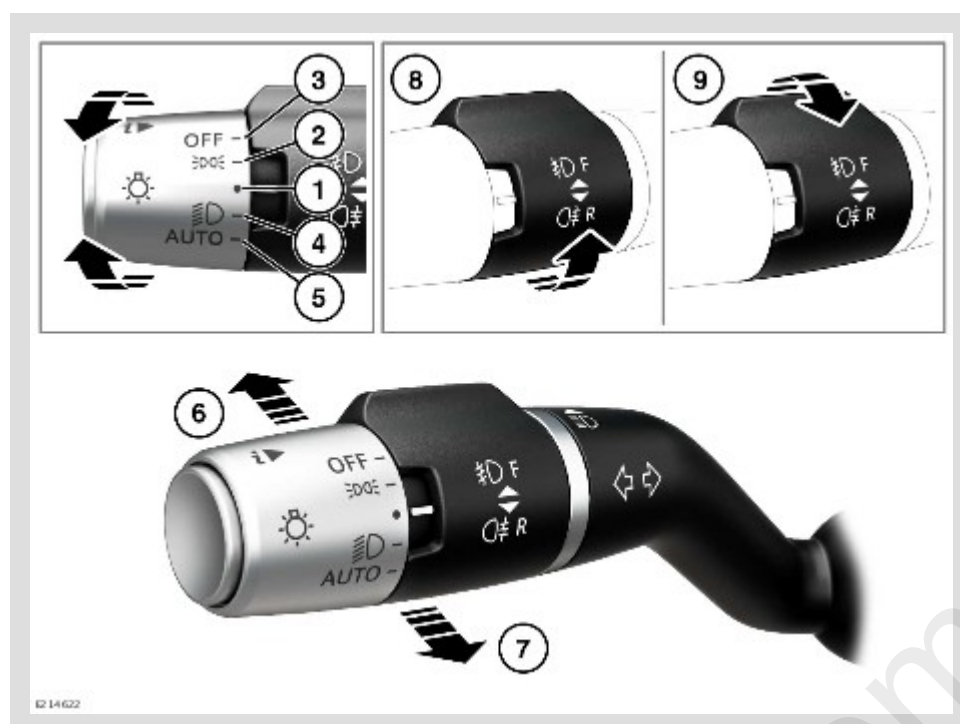
NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.

Left installation is shown, right installation is similar.



LEFT STEERING COLUMN SWITCH



ITEM	DESCRIPTION
1	Neutral position
2	Side lamps
3	All lamps OFF
4	Headlamps ON
5	AUTO
6	High beam
7	High beam flash
8	Front fog lamps ON/OFF
9	Rear fog lamps ON/OFF

The left steering column switch allows the following selections:

- All exterior lamps OFF
- The front and rear position lamps(ROW)/parking lamps and tail lamps(NAS) lamps ON
- Switches the lighting to automatic mode (if equipped)
 - AFS
 - Adaptive Driving Beam.
- Low/high beams ON/OFF

- High beams flash
- Turn Signal Indicator ON
- Rear fog lamps ON/OFF
- Front fog lamps ON/OFF
- Front and rear side marker lamps/Reflector (NAS only) ON/OFF
- Trip computer functions.

The left steering column switch positions are all connected through a resistive ladder. The output from the resistive ladder is connected to the Steering Wheel Module (SWM) which converts the switch operation to Local Interconnect Network (LIN) signals. The signals are received by the BCM/ GWM which operates the required exterior lighting selection.

Headlamp Flash

The headlamp flash function operates with the ignition ON or OFF. The high beam flash function is operated by pulling the left steering column switch away from the IPC. The non-latching switch operates the high beam headlamps for as long as the switch is held. The switch returns to the high beam OFF position when released. The blue high beam indicator illuminates when the high beam is active.

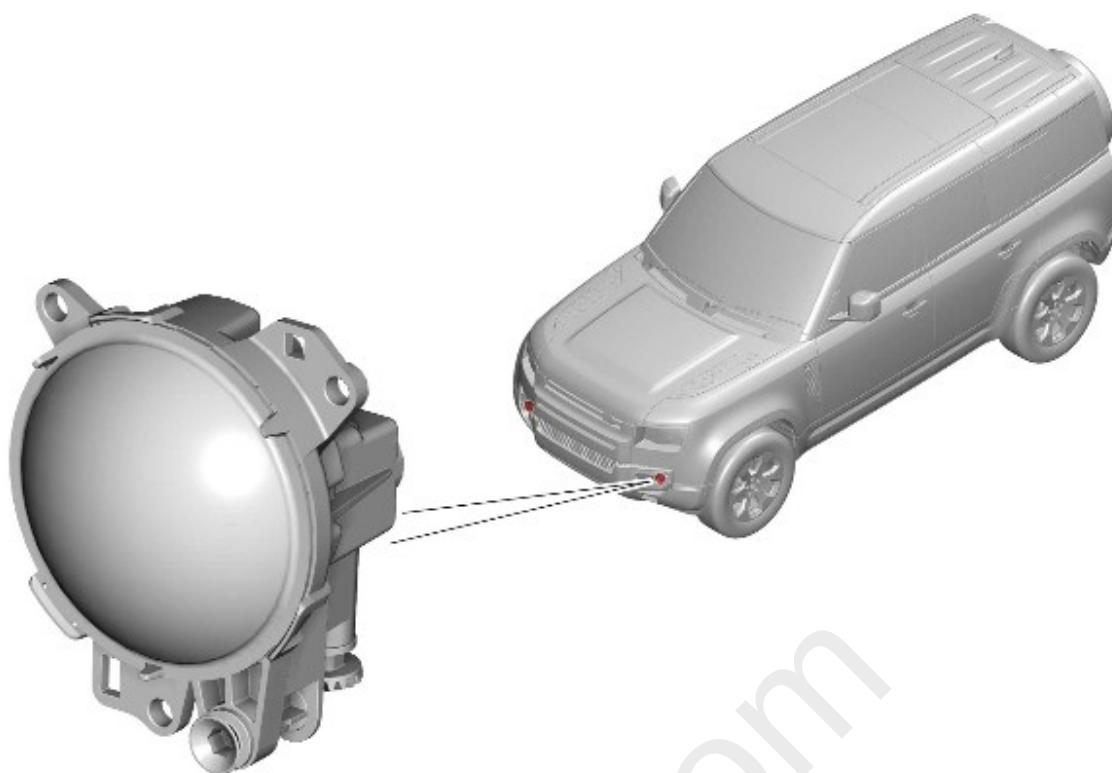
FRONT FOG LAMP – IF EQUIPPED



NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.

Left installation is shown, right installation is similar.



E246974

The LED front fog lamps are located in apertures in the front bumper. Each lamp is secured in the bumper with 3 screws. Each fog lamp has an adjuster which is used to set the fog lamp to the correct alignment. The front fog lamp indicator is illuminated in the IPC when the front fog lamps are active.

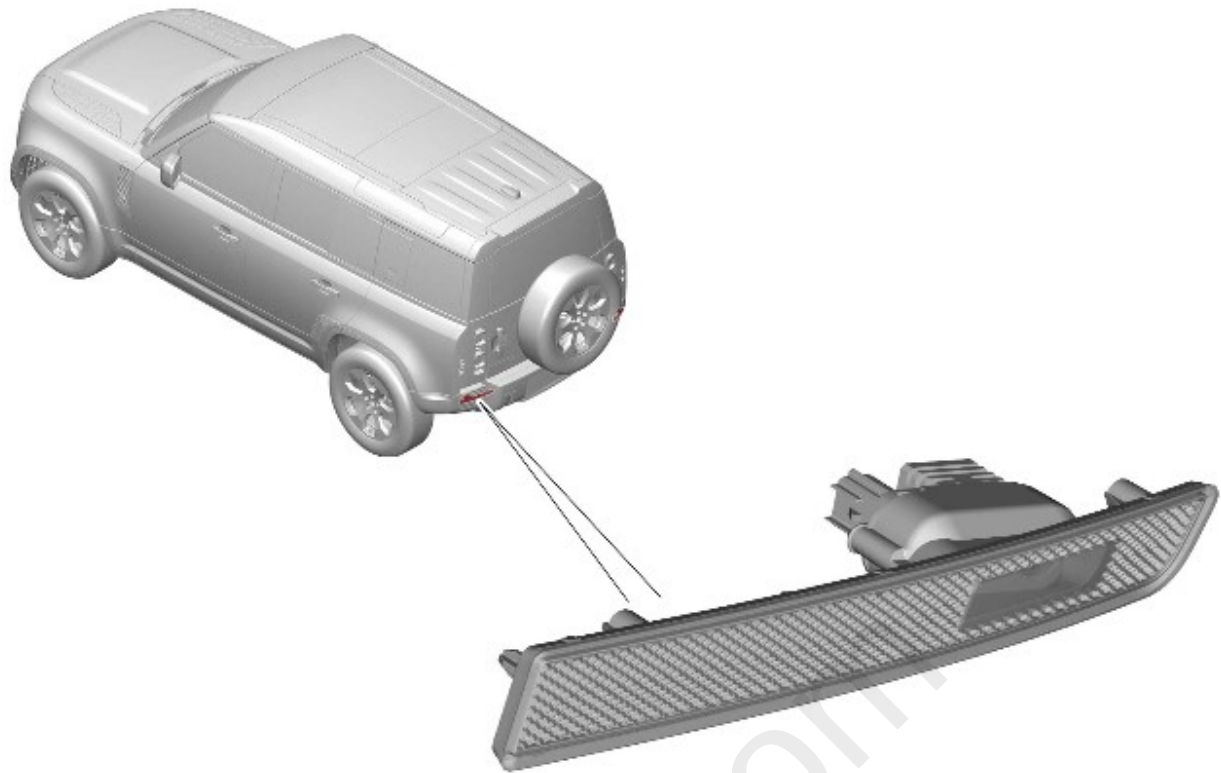
REAR FOG LAMP



NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.

Left installation is shown, right installation is similar.



E246975

The LED rear fog lamp is located in the rear bumper.

The rear fog lamp indicator is illuminated in the IPC when the rear fog lamps are active.

TURN SIGNAL INDICATORS

The turn signal indicators are operated by moving the left steering column switch up or down to select right or left turn signal indicator respectively. The switch latches in each position.

The switch has a turn signal indicators lane change function. If the switch is gently pushed but not latched, to either turn signal indicators position and then released. The applicable turn signal indicators flash 3 times and then are automatically canceled.

The left steering column switch is only active in Power Mode 6 (ignition ON). The hazard warning lamp switch is active at all times, regardless of the Power Mode. When active, the side repeater lamps flash at a frequency cycle of 400 milliseconds ON and 400 milliseconds OFF.

If a turn signal indicator fails, the green warning indicator in the IPC flashes at twice the normal rate. The audible ticking from IPC sounder is also at twice the normal rate.

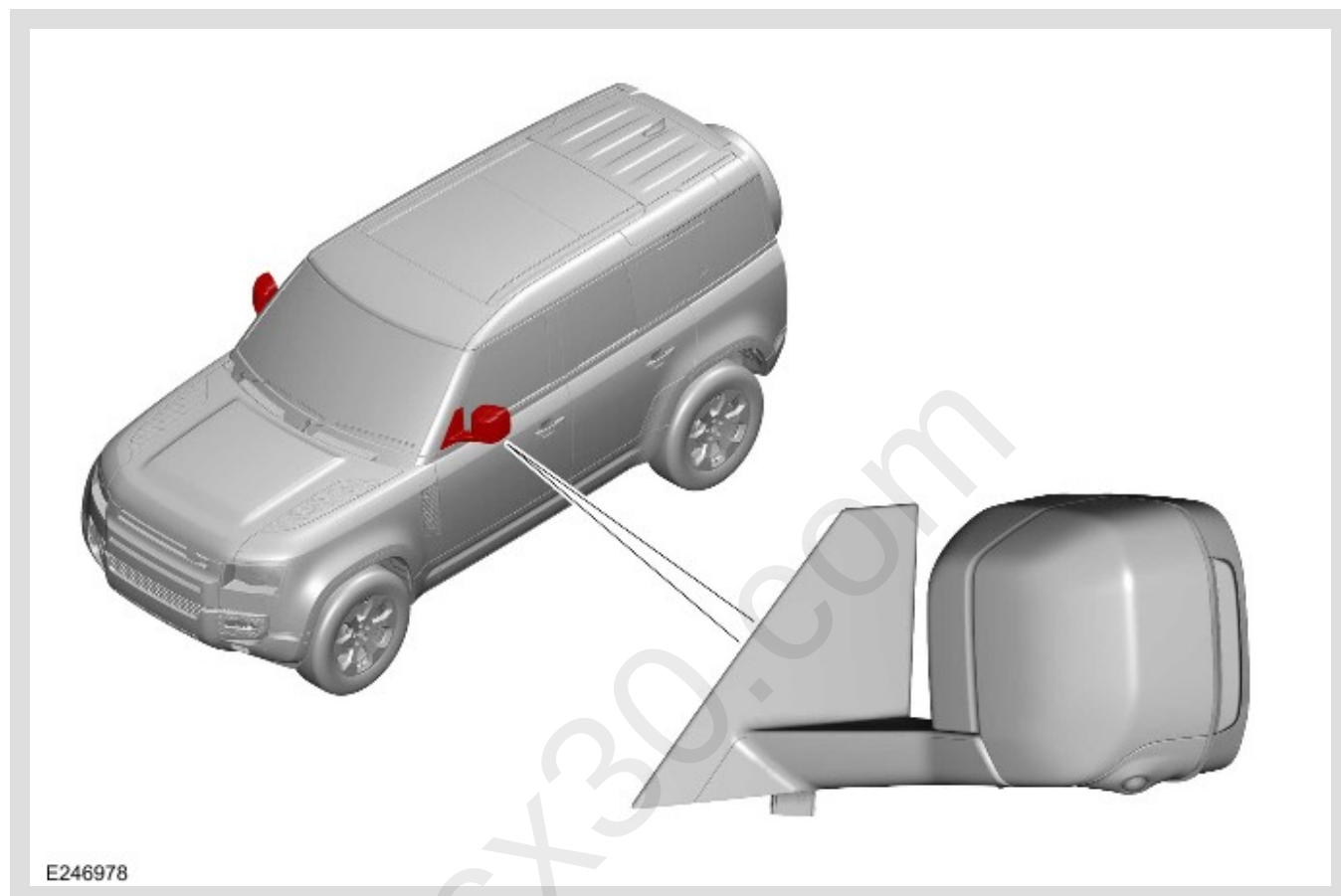
If a trailer is connected to the vehicle, the trailer turn signal indicators flash at the same frequency operates as the vehicle turn signal indicators.

SIDE REPEATER LAMP

NOTE:

Vehicle with 5 doors is shown, vehicle with 3 doors is similar.

Left installation is shown, right installation is similar.



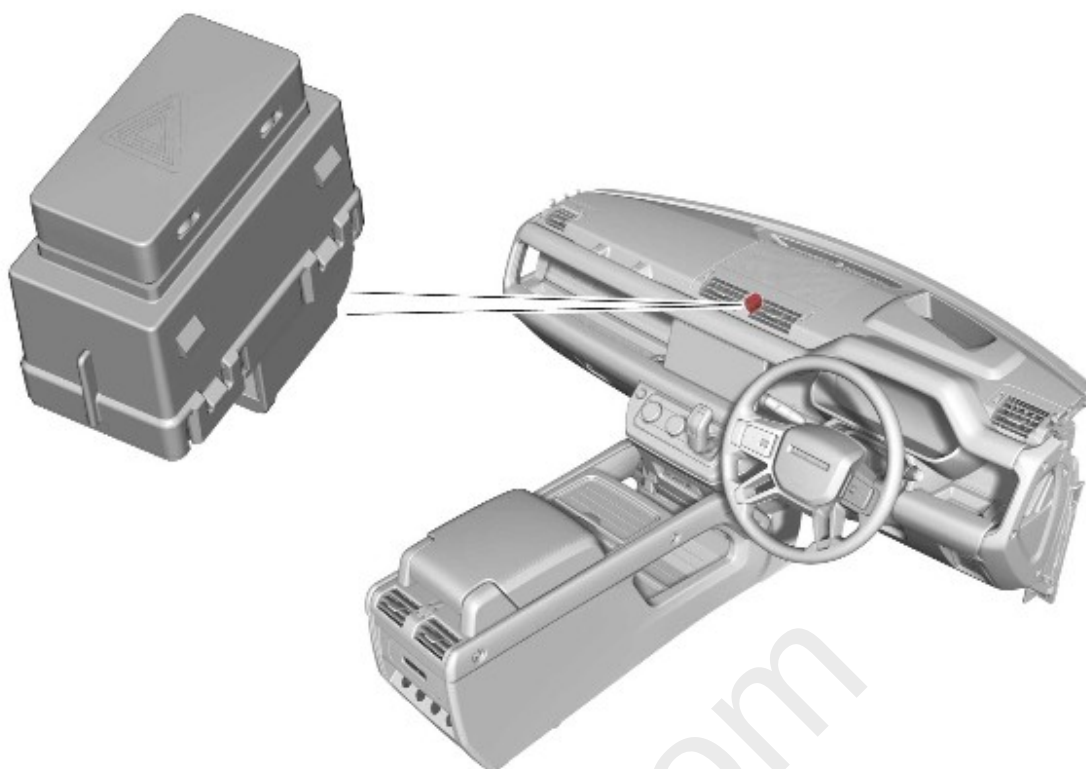
The side repeater lamps are located in the door mirrors. The side repeater lamps use LEDs.

The side repeater lamps have the same functionality as the front and rear turn signal indicators. The side repeater lamps are operated by the left steering column switch or by the hazard warning lamp switch. When a side repeater lamp fails, the turn signal indicators continue to flash at the normal rate.

HAZARD WARNING LAMP

NOTE:

RHD vehicle is shown, LHD vehicle is similar.



E246980

The hazard warning lamps are controlled by a non-latching switch in the center of the instrument panel. The hazard warning lamps operate at all times when selected and are not dependent on the Power Mode.

When the hazard warning lamps are selected ON, all of the turn signal indicators operate as previously described. Both turn signal indicators in the IPC also flash. The hazard warning lamps flash at a rate of 400 milliseconds ON and 400 milliseconds OFF. When the hazard warning lamps are active, they override any request for turn signal indicators operation.

If a trailer is connected to the vehicle, the trailer turn signal indicators flash at the same frequency operates as hazard warning lamps.

The hazard warning lamps can also be enabled by an impact signal from the Restraints Control Module (RCM). This is received by the BCM/ GWM which enables the hazard warning lamps. The hazard warning lamps can be canceled when impact mode is canceled by the RCM.

TRAILER LIGHTING



NOTE:

Several different types of trailer socket can be installed to the vehicle depending on market specifications.

The BCM/ GWM monitors the turn signal indicators and can detect when more than 2 lamps are installed. When a trailer is detected, the trailer warning indicator in the IPC flashes in synchronization with the turn signal indicators.

If 1 or more of the turn signal indicators on the vehicle or the trailer are defective, the trailer warning indicator does not flash. This provides an alert for the driver of a failure.

For additional information, refer to: [Towbar](#) (502-03 Towbar, Description and Operation).

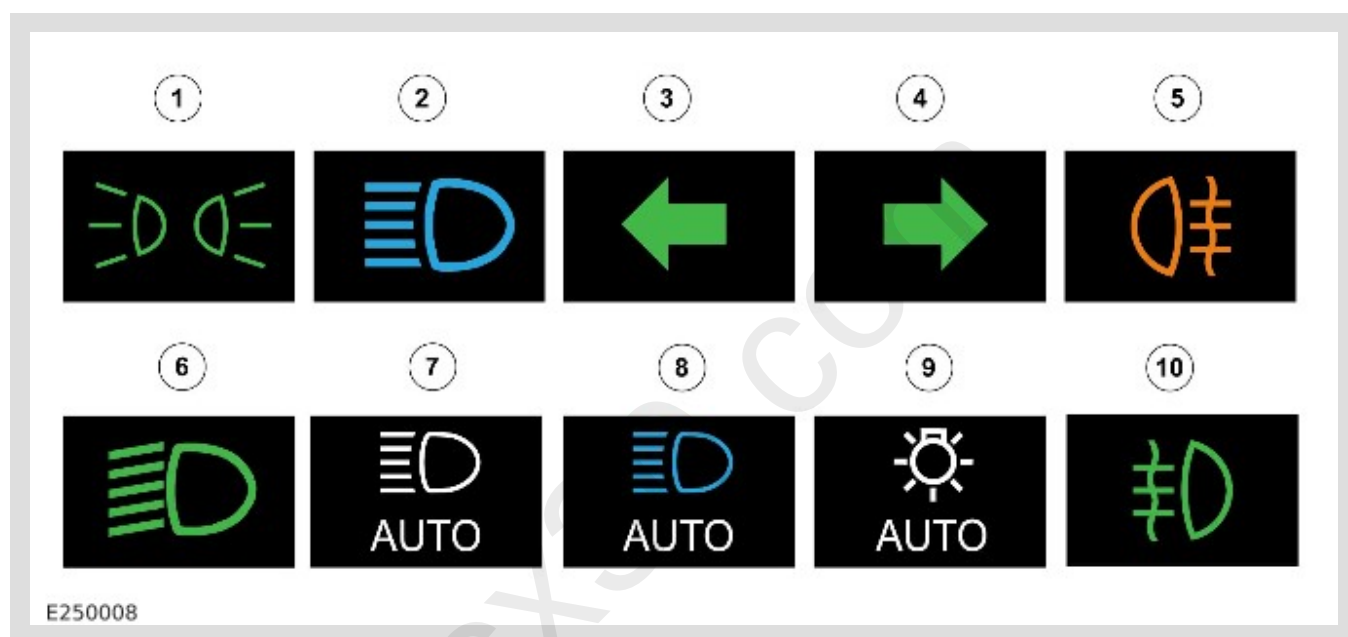
RAIN/LIGHT SENSOR

The automatic headlamp system uses a rain/light sensor which is connected to the BCM/ GWM through a LIN. The BCM/ GWM reacts to the signals from the rain/light sensor and enables the exterior lighting as required.

The light sensor is incorporated in the rain/light sensor which is located on the inside of the windshield, below the Rear View Mirror. The wiper system also uses the rain/light sensor for automatic wiper operation.

For additional information, refer to: [Wipers and Washers](#) (501-16 Wipers and Washers, Description and Operation).

WARNING INDICATOR



1 Position lamp

2 High beam

3 Turn signal indicators - Left

4 Turn signal indicators - Right

5 Rear fog lamp

6 Low beam

7 White - Automatic lamp operation:

- Auto High Beam active but High Beam not switched on.
- Adaptive Driving Beam active but High Beam not switched on.

8 Blue - Automatic lamp operation:

- Auto High Beam active and High Beam switched on.
- Adaptive Driving Beam active and High Beam switched on.

9 Automatic lamp operation:

- DLRs switched on.

10 Front fog lamp.

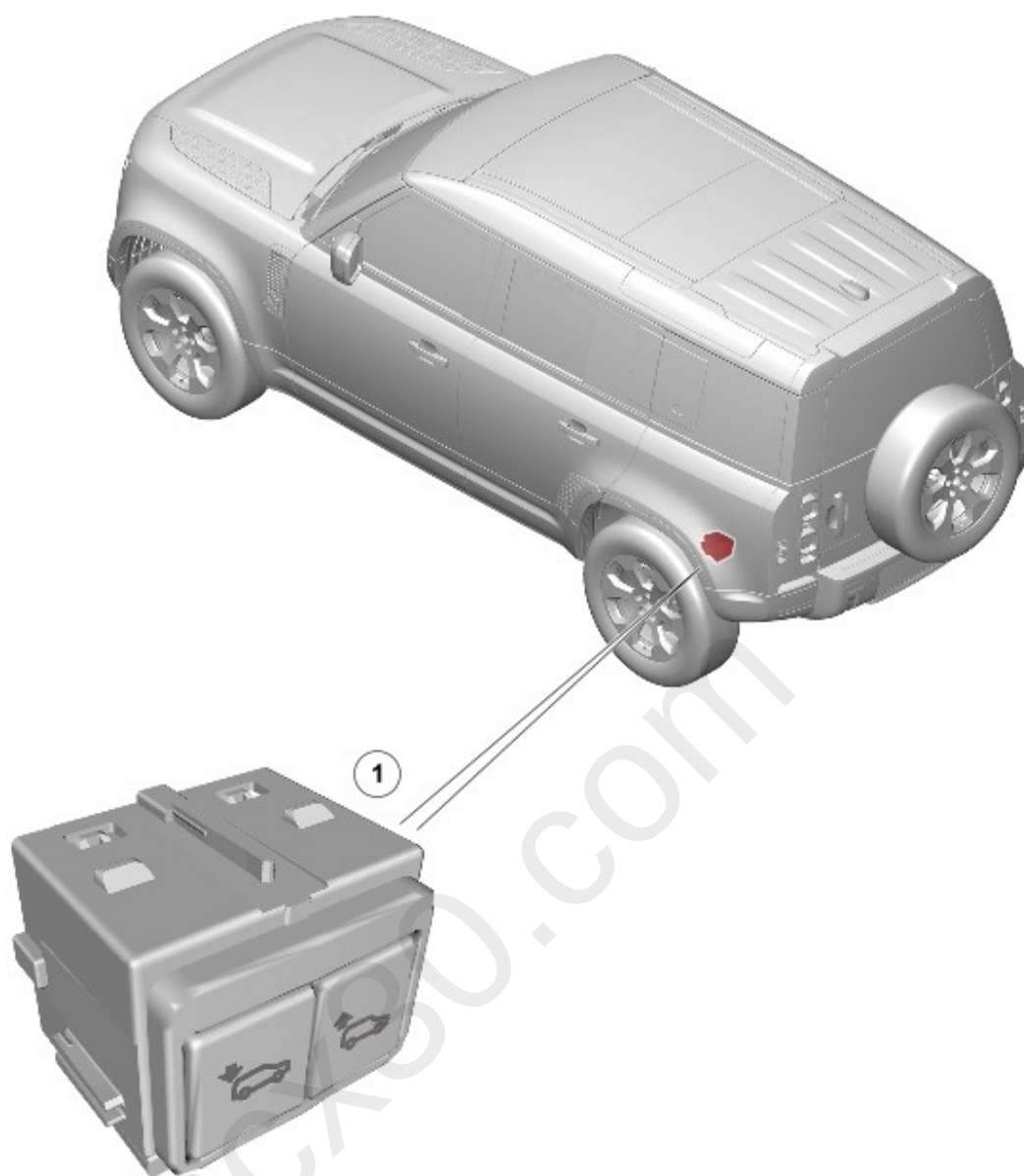
The exterior lighting and the Auto High Beam or Adaptive Driving Beam warning indicators are enabled by the BCM/ GWM. The BCM/ GWM sends HS CAN Human Machine Interface (HMI) system bus messages to the IPC.

REAR HEIGHT ADJUST SWITCH

NOTE:

- The amount of rear height adjustment is dependent on the current suspension height setting, and if any doors are open.
- Vehicle with 5 doors is shown, vehicle with 3 doors is similar.
- The front of the vehicle may also lower in order to maintain the correct headlamp alignment.

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ITEM	DESCRIPTION
1	Rear height adjust switch

The height of the rear suspension can be adjusted manually by using the buttons located on the left of the loadspace. The rear height adjust feature is useful when loading or unloading the vehicle, connecting or disconnecting a trailer.

The rear height adjust feature operates for a short period of time in Power Mode 0 (ignition OFF). The feature stops operating when in Power Mode 6 (ignition ON).

The rear height adjust feature can also be operated through the smart key.

HEIGHT SENSORS

The front and rear height sensors are used by the headlamp leveling system.

For additional information, refer to: [Vehicle Dynamic Suspension](#) (204-05 Vehicle Dynamic Suspension, Description and Operation).

IMAGE PROCESSING MODULE

The IPMA is a module that has an integrated forward facing camera with the lens directed through the windshield. The IPMA is located above the rear view mirror behind the rear view mirror covers. The IPMA is attached to a bracket, which is bonded to the windshield.

The IPMA is used to identify oncoming vehicles and other objects to control the Auto High Beam and the Adaptive Driving Beam.

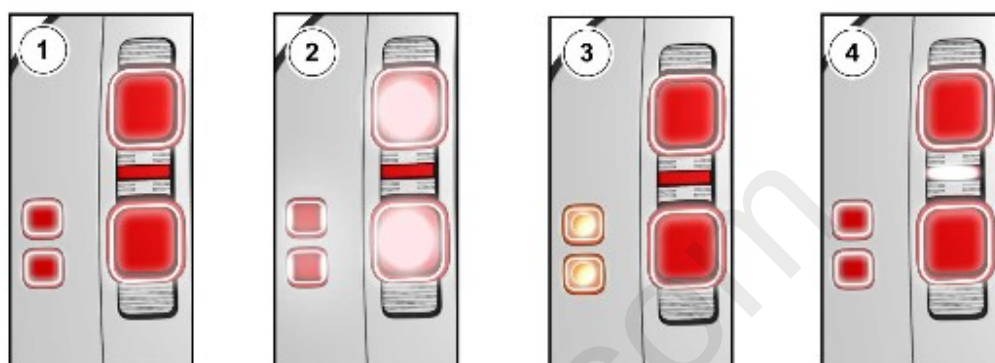
The camera is a low resolution image sensor that detects headlamps and tail lamps of the vehicles ahead. The IPMA evaluates the image data, checking for light intensity and location. Depending on the image data, the IPMA then sends a low or high beam request to the BCM/ GWM. The signals are sent through the HS CAN underbody (UN) system bus.

- For additional information, refer to: [Speed Control](#) (310-03A Speed Control - INGENIUM I4 2.0L Petrol/INGENIUM I4 2.0L Petrol - PHEV, Description and Operation).
- For additional information, refer to: [Speed Control](#) (310-03B Speed Control - INGENIUM I6 3.0L Petrol, Description and Operation).
- For additional information, refer to: [Speed Control](#) (310-03C Speed Control - INGENIUM I4 2.0L Diesel, Description and Operation).

DAYTIME RUNNING LAMP

For additional information, refer to: [Daytime Running Lamps](#) (417-04 Daytime Running Lamps, Description and Operation).

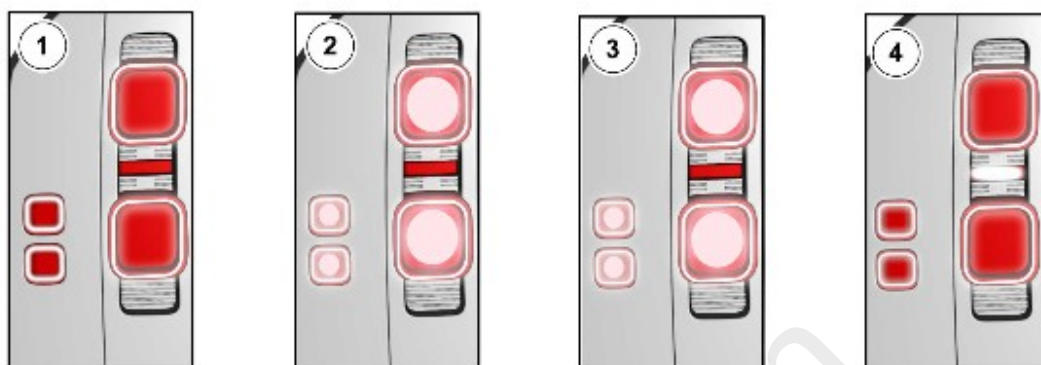
TAIL LAMP OPERATION – REST OF WORLD



E246984

ITEM	DESCRIPTION
1	Rear position lamp ON
2	Stop lamp ON
3	Turn signal indicator ON
4	Reverse lamp ON

TAIL LAMP OPERATION – NORTH AMERICAN SPECIFICATION



E254281

ITEM	DESCRIPTION
1	Tail lamp ON
2	Stop lamp ON
3	Turn signal indicator ON
4	Back Up Lamp ON

EMERGENCY STOP SIGNAL – ROW ONLY

The Emergency Stop Signal is enabled only when the vehicle speed is above 50 km/h (31 mph). The Emergency Stop Signal is enabled and disabled automatically .

The Emergency Stop Signal operates independently of other lamps but does not override any turn signal indicator or hazard warning lamp function.

In the event of Emergency Stop Signal activation, the hazard warning lights are enabled. The brake lights start flashing instead of being constantly on.

The hazard warnings are disabled when driving off again or by pressing the hazard warning button.

CORNERING LAMP – IF EQUIPPED

The cornering lamp (If front fog lamps are equipped) is controlled by:

- Left steering column switch
- Steering Angle Sensor Control Module (SASM).

If either the left or right turn signal indicators is selected, the vehicle speed is less than 40 km/h (24 mph), the cornering lamps illuminate.

When a turn angle signal is generated from the SASM and the vehicle speed is less than 40 km/h (24 mph), the cornering lamps illuminate (Matrix LEDs headlamp only).

FRONT FOG LAMP – IF EQUIPPED



NOTE:

The front fog lamps remain ON when the high beam 'flash' function is operated.

Each fog lamp uses LEDs light source which is controlled by the BCM/ GWM.

The fog lamp switch can be rotated to enable the front fog lamps when the following conditions occur:

- Power Mode 6 (ignition ON) or above.
- The left steering column switch is in the side lamp or headlamp position.
- The left steering column switch is in the 'AUTO' and rain/light sensor is requesting low beam.

FRONT FOG LAMP FUNCTIONALITY – NAS ONLY

The front fog lamps operate as described previously but there are following differences which cover local laws governing lamp usage.

If the low beam and the front fog lamps are ON and the high beam is selected, the front fog lamps are deactivated.

REAR END COLLISION ALERT SIGNAL – ROW ONLY

The Rear End Collision Alert Signal operates independently of other lamps and is enabled/disabled automatically.

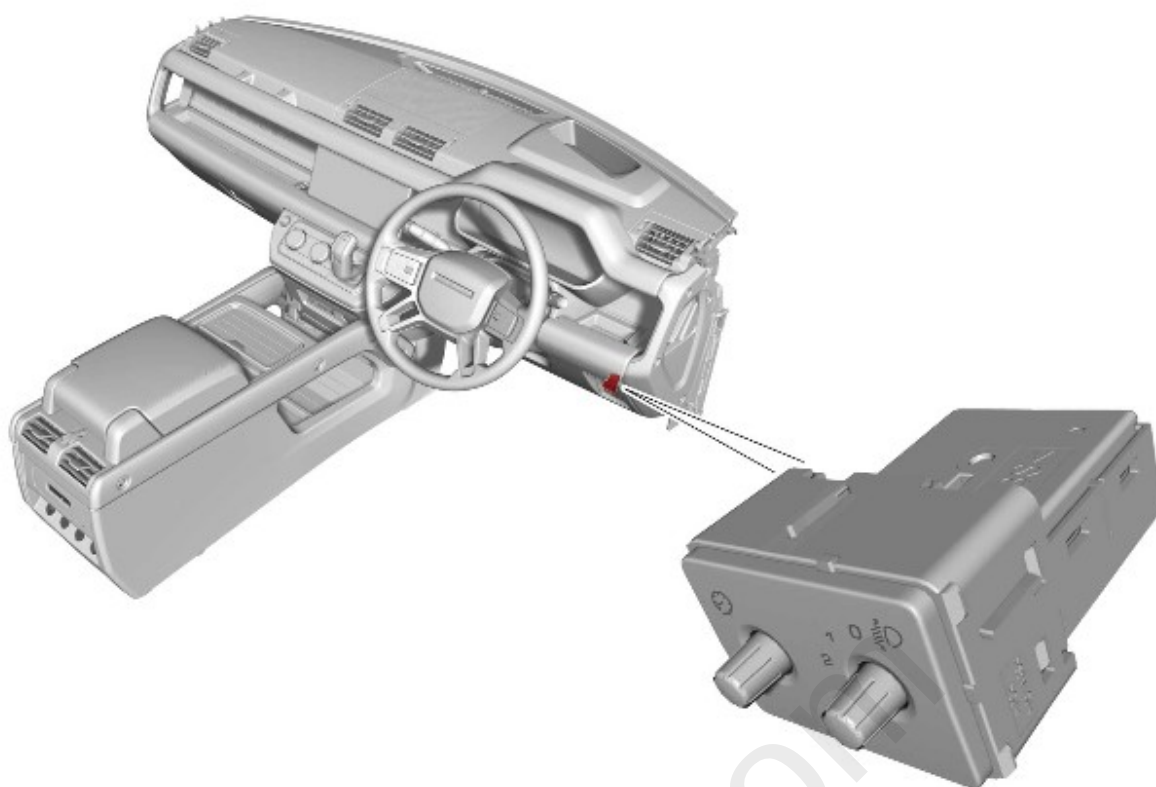
The Rear End Collision Alert Signal is not enabled when the turn signal indicator, the hazard warning lamp or Emergency Stop Signal is enabled.

MANUAL HEADLAMP LEVELING – IF EQUIPPED



NOTE:

RHD vehicle is shown, LHD vehicle is similar.



E246981

The LED headlamp has a manual control switch for headlamp leveling. The switch should be used for laden conditions as described:

The positions are defined as follows:

ROTARY CONTROL	VEHICLE LOAD
0	Driver or driver and front passenger.
1	Driver and all passengers.
2	Driver and all passengers and luggage to the maximum.
3	Driver only and luggage to the maximum.

AUTOMATIC HEADLAMP LEVELING – IF EQUIPPED

Vehicles with Premium LEDs or Matrix LEDs headlamps, have air suspension installed and NAS market vehicles have automatic headlamp leveling.

HEADLAMP COURTESY DELAY



ITEM	DESCRIPTION
1	Lock
2	Headlamp ON/OFF
3	Panic alarm
4	Unlock
5	Tailgate unlatch

The BCM/ GWM controls a headlamp delay function which illuminates the driveway after leaving the vehicle. The BCM / GWM enables the low beam for the required delay period. The headlamps remain illuminated for up to 4 minutes. Press the smart key headlamp button to switch the lamp OFF.

The timeout period can be changed from the following points:

- OFF
- 30 seconds
- 60 seconds
- 120 seconds
- 240 seconds.

The default value is 30 seconds. This feature can be configured in the 'Vehicle' menu. Activation of the automatic lamp timeout feature also displays a message in the message center.

For additional information, refer to: [Message Center](#) (413-08 Message Center, Description and Operation).

REMOTE HEADLAMP

The remote headlamp allows the low beam to illuminate for a selectable pre-set period by pressing the headlamp button on the smart key. The headlamps illuminate ON when the first button press, and a further button press switches OFF the headlamps.

The remote headlamp operation feature uses the same timeout period as set by the headlamp delay timeout feature. However when the timeout period has been set to '0', then remote headlamp operation uses the default value of 30 seconds.

CRASH INDICATIONS

When the vehicle crash sensor is triggered, the hazard warning lights operate automatically until the crash signal is reset or they are manually switched off.

TIRE PRESSURE ASSIST – NAS ONLY

With the Tire Pressure Assist enabled from the "Vehicle" and "Tire Information" menus, the turn signal indicators flash to identify tire inflation status.

For additional information, refer to: [Tire Pressure Monitoring System LocSync](#) (204-04 Wheels and Tires, Description and Operation).

TRAFFIC JAM PILOT

Traffic jam pilot allows the vehicle to follow the preceding vehicles along a highway. In order to do so it needs to have a good vision of the road ahead. Ideally the lighting system needs to be set to automatic (rain/light sensor in daytime or headlamps at night-time). However, there are number of use cases where the driver may change the lighting system away from ideal auto state (for example, fog in daytime).

Traffic jam pilot is enable when:

- The lighting system is operating in automatic mode.
- The low beams are manually enabled and/or the front fog lamps are enabled.

Traffic jam pilot requests confirmation from the driver. The Traffic jam pilot is disabled when any manual control of the lighting system falls outside of these parameters.

Temporary activation of high beam (flash) is permitted but Auto High Beam can not operate high beam when traffic jam pilot is enabled.

DRIVER FATIGUE ALERT

This function aims to bring the vehicle to a stop, where it is safe to do so when the driver becomes unresponsive. Driver fatigue alert is triggered when the system confirms the driver is unresponsive. The feature triggers the activation of the hazard warning lamps, decelerates the vehicle in-lane and secures it, when it has been brought to rest.

The signal is activated on receipt of the hazard warning lamps activation signal from Blindspot Monitoring Control Module (SODL)/ SODR control module.

The signal is canceled when the hazard warning lamps switch is pressed or SODL/ SODR stops sending the hazard warning lamps activation signal.

AUTOMATED PARKING

The Automated Parking feature identifies parking spaces and automatically parks the vehicle into a suitable space. To make sure the visibility of the moving vehicle, the showing of exterior lights may be requested. In some markets, turn signal indicators are enabled as required for a left/right turn. This feature requests lights to go to auto when being activated.

A request for auto lights operation is made at the start of automated parking mode. When any exterior lights are already ON, this command is ignored. When no exterior lights are active then the appropriate lights for automode in the prevailing conditions are enabled.

The turn signal indicator is switched OFF after completion of turn maneuver or cancellation of automated parking in appropriate markets.

REMOTE PARKING

The feature requests lights to go to auto on activation. The turn signal indicator is switched OFF after completion of the turn maneuver or cancellation of remote parking in appropriate markets.

REMOTE CONTROL DRIVE

The feature enables moving the vehicle controlled by a mobile device at less than 2 km/h (1.2 mph). When this feature is operational the vehicle hazard warning lamps operate in appropriate markets.

ADAPTIVE DRIVING BEAM

Adaptive Driving Beam is equipped on Matrix LEDs headlamps (except NAS), to create shadowing in order to adapt the light distribution to the road conditions ahead.

The Adaptive Driving Beam system operates when the following conditions are met:

- The vehicle speed is above 40 km/h (24 mph).
- No street lights are detected by the forward facing camera.
- Ambient light illuminance less than 6 lux.
- No unfavorable weather conditions (fog, rain or snow) detected by the camera.
- The vehicle is not in REVERSE.

The system becomes active by shadowing objects detected when:

- Oncoming vehicle is at a distance greater than 400 meters or less.
- Preceding vehicle is at a distance greater than 100 meters or less.
- Bicycle is at an oncoming distance greater than 75 meters.
- Reflective object is recognized:
 - Reflective objects where the reflection could cause a glaring concern for the driver is detected.

 NOTE:

When any of the above conditions are not met, the Adaptive Driving Beam does not operate.

The system becomes inoperative when:

- The vehicle speed is below 24 km/h (14 mph).
- The street lights are detected by the forward facing camera.
- The ambient light illuminance is greater than 1000 lux.
- The unfavorable weather conditions (fog, rain, or snow) detected by the camera.
- The vehicle in REVERSE.

The following instructions for enabling or disabling Adaptive Driving Beam function:

- 1 Pull and release the left steering column switch to manually override to low beam from Adaptive Driving Beam. The IPC warning lamp illuminates.
- 2 Push and release the left steering column switch to return to Adaptive Driving Beam. The IPC warning lamp illuminates.
- 3 Repeated pushing of the left steering column switch toggles the operation of the high beam between automatic and manual.
- 4 Rotate the left steering column switch to the low beam to switch the Adaptive Driving Beam system OFF.

AUTO HIGH BEAM

The high beam is disabled in the case of preceding or oncoming vehicles or in urban areas. This leads to an optimal usage of the headlamps while driving at night:

- Improving visibility to the driver.
- Relieving the driver of the task of manually controlling the high beams.

The functionality of the Auto High Beam system is distributed between the IPMA and the BCM/ GWM.

The driver may at any time manually override the Auto High Beam to operate the beams in a manual mode by using the left steering column switch.

When the system is active, the feature uses visual data from a forward facing camera to detect:

- When there are preceding or oncoming vehicles.
- If the vehicle is in an urban area.

The Auto High Beam system is enabled or disabled by:

- IPC menu

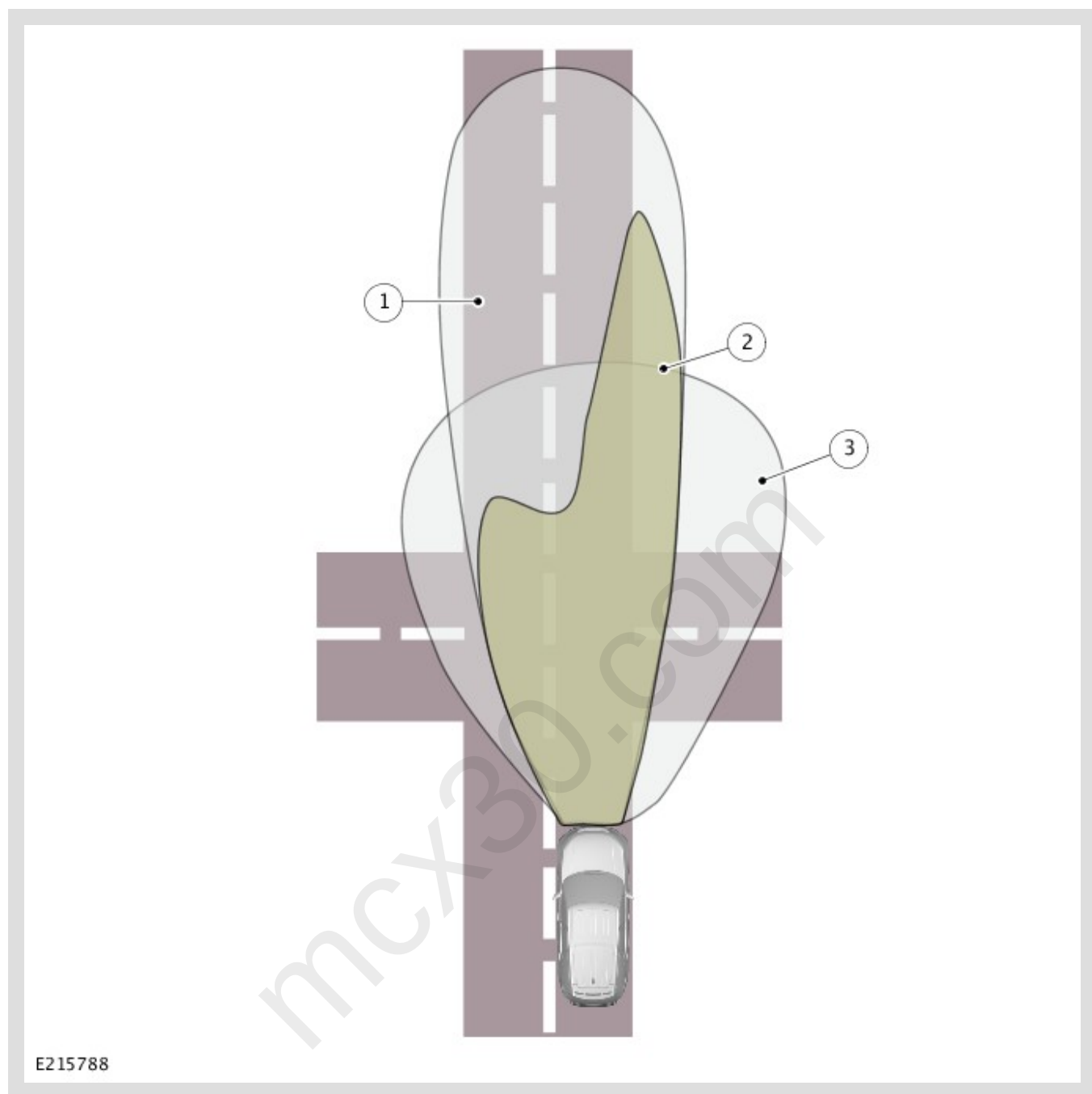
- FCDIM menu
- Occupant Monitoring Module (OMM).

The following instructions for enabling or disabling Auto High Beam system:

- 1** Pull and release the left steering column switch to manually override to low beam from Auto High Beam. The IPC warning lamp illuminates.
- 2** Push and release the left steering column switch to return to Auto High Beam. The IPC warning lamp illuminates.
- 3** Repeated pushing of the left steering column switch toggles the operation of the high beam between automatic and manual.
- 4** Rotate the left steering column switch to the low beam to switch the Auto High Beam system OFF.

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ADAPTIVE FRONT LIGHTING SYSTEM



ITEM	DESCRIPTION
1	Motorway mode
2	Country mode and adverse weather mode
3	City mode

The AFS is active when AUTO lights is selected and the ambient light level is below a predetermined level. The AFS is deactivated when high beam is manually selected or AUTO lights are deselected.

**NOTE:**

If an urban environment is detected, country mode or city mode operates.

While operating as an AFS, the dipped beams are automatically adjusted to suit the vehicle speed and weather conditions:

- Country mode operates unless any of the conditions in City mode, Motorway mode and Adverse weather mode are met. Country light operates when the vehicle is stopped or High Beam is operating.
- City mode: A wider headlamp beam that operates at vehicle speeds up to 48 km/h (30 mph) when an urban environment is detected.
- Motorway mode: A raised headlamp beam that operates at vehicle speeds above 110 km/h (68 mph).
- Adverse weather mode: Operates when the windshield wipers are active for more than 2 minutes and the vehicle's speed is below 64 km/h (40 mph).

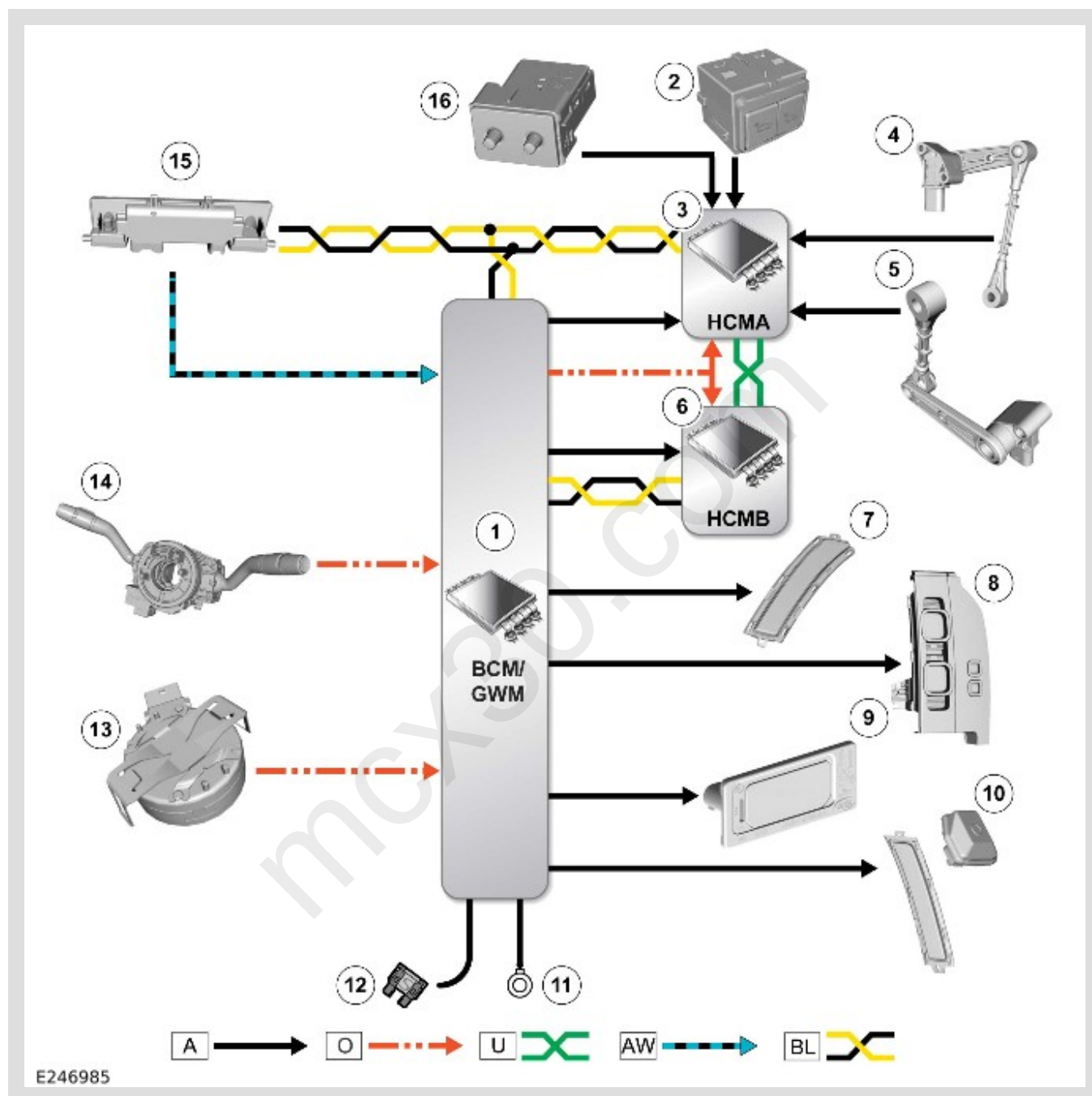
DIAGNOSTICS

The BCM/ GWM records any Diagnostic Trouble Code (DTC)s and related data. Read the DTCs and related data with the Jaguar Land Rover (JLR) approved diagnostic equipment.

The JLR approved diagnostic equipment enables certain components to be activated and also live data to be read.

CONTROL DIAGRAM

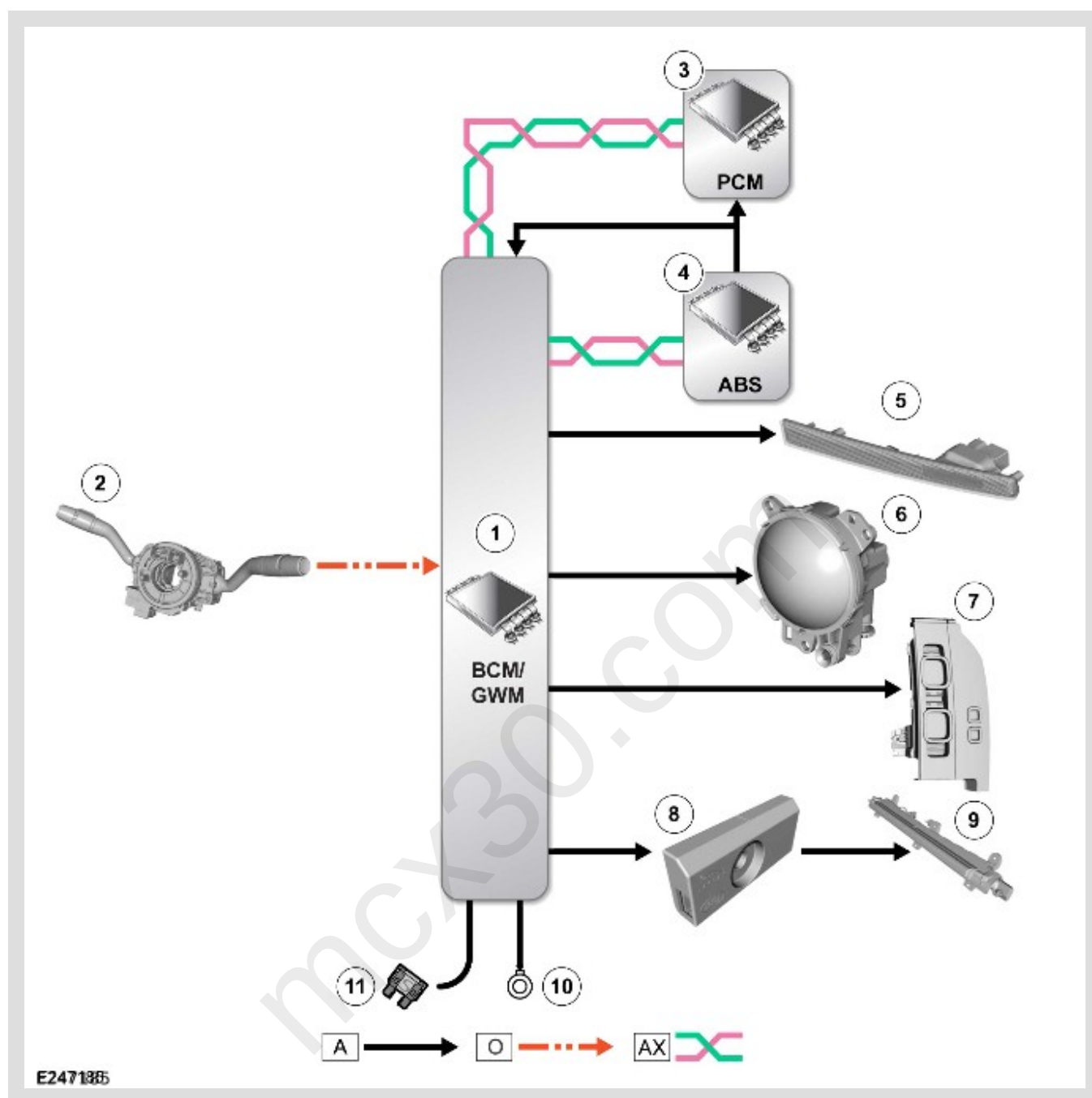
CONTROL DIAGRAM - 1 OF 3



A = HARDWIRED: O = LIN: U = PRIVATE CAN: AW = ETHERNET: BL = HS CAN UN SYSTEM BUS.

ITEM	DESCRIPTION
1	BCM/ GWM
2	Rear height adjust switch
3	HCM

ITEM	DESCRIPTION
4	Front height sensor (quantity 2)
5	Rear height sensor (quantity 2)
6	Headlamp Control Module B (HCMB)
7	Rear side marker lamp/Reflector (quantity 2)
8	Tail lamp assembly (quantity 2)
9	Number Plate Lamp (ROW)/License Plate Lamp (NAS) (quantity 2)
10	Front side marker lamp/Reflector (quantity 2)
11	Power
12	Ground
13	Rain/light sensor
14	Left steering column switch
15	IPMA
16	IPC dimmer

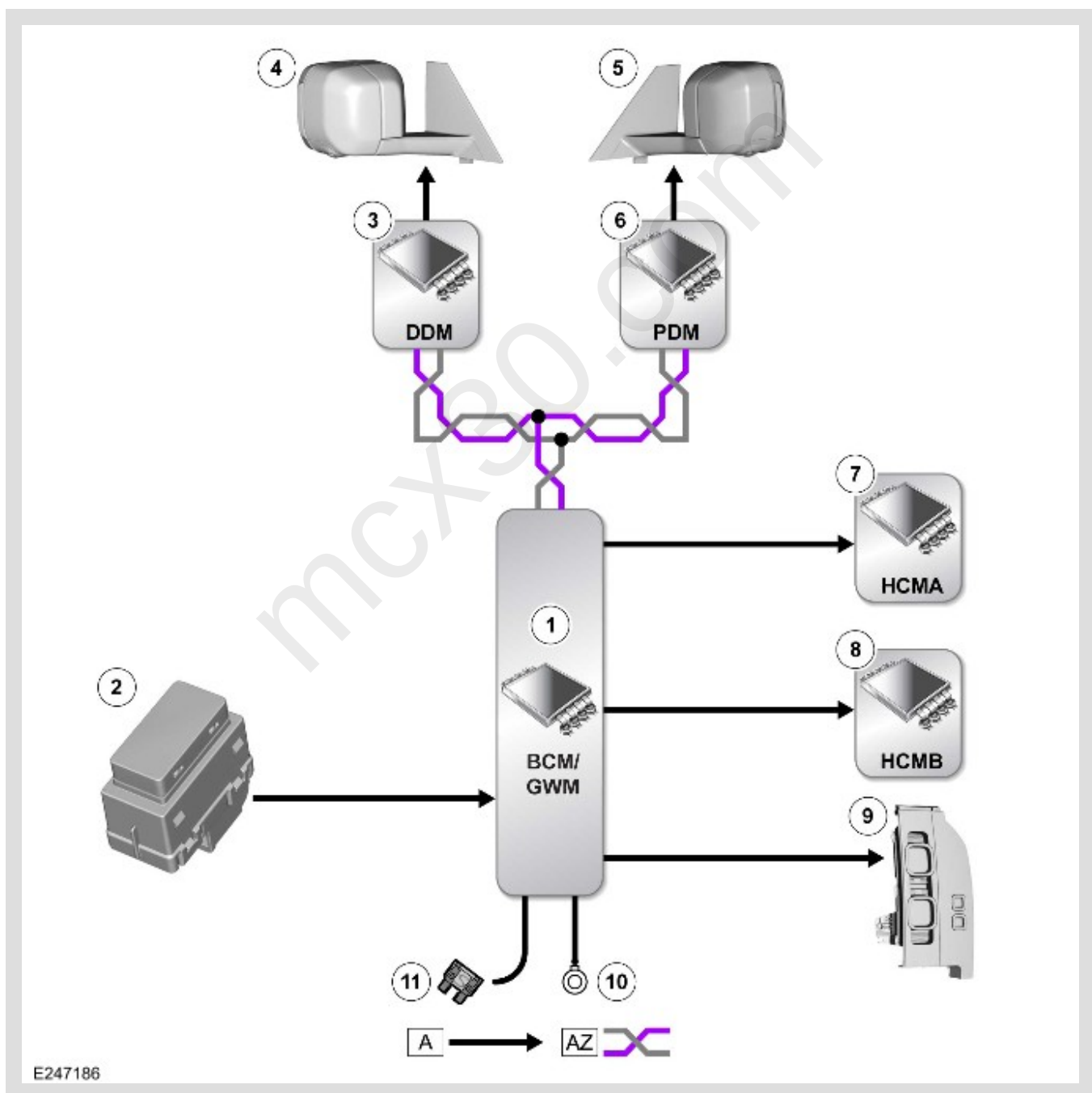


A = HARDWIRED: O = LIN: AX = FLEXRAY.

ITEM	DESCRIPTION
1	BCM/ GWM
2	Left steering column switch
3	PCM
4	Anti-Lock Brake System Control Module (ABS)
5	Rear fog lamp (quantity 2)

ITEM	DESCRIPTION
6	Front fog lamp (quantity 2)
7	Tail lamp assembly (quantity 2)
8	HMSL filter
9	HMSL
10	Ground
11	Power

CONTROL DIAGRAM - 3 OF 3



A = HARDWIRED: AZ = HS CAN BODY SYSTEM BUS.

ITEM	DESCRIPTION
1	BCM/ GWM
2	Hazard warning lamp switch
3	DDM
4	Side repeater - Driver side
5	Side repeater - Passenger side
6	PDM
7	HCM
8	HCMB
9	Tail lamp assembly (quantity 2)
10	Ground
11	Power

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